This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

MANUAL OF GEOGRAPHY.

W^M. LAWSON.

COLLINS' SCHOOL SERIES

William Collins, Sons, & Co's Educational Works.

COLLINS' ELEMENTARY AND ADVANCED SCIENCE SERIES,

Adapted to the requirements of the South Kensington Syllabus, for Students in Science and Art Classes, and Higher and Middle Class Schools.

ELEMENTARY SERIES.

In Fcap. 8vo, fully Illustrated, cloth lettered, price 1s. each volume.

1. Practical Plane and Solid Geometry. By H. Angel, Islington Science School, London.
2. Machine Construction and Drawing. By E. Tomkins. Vol. I. Text, Vol. II. Plates.

3a Building Construction—Stone, Brick, and Slate Work. By R. S. Burn, C.E. Vol. I. Text, Vol. II. Plates.

3b Building Construction—Timber and Iron Work. By R. S. Burn, C.E. Vol. I. Text, Vol. II. Plates.

4a Naval Architecture — Laying Off. By S. J. P. Thearle, F.R.S.N.A., London. Vol. I. Text, 1s. Vol. II. Plates, 2s.

4b Naval Architecture—Wood and Iron Shipbuilding. By S. J. P. Thearle. Vol. I. Text, 1s. Vol. II. Plates, 2s.

5. Pure Mathematics. By L. Sergeant, B.A. (Camb.).
6. Theoretical Mechanics.
7. Applied Mechanics. By W. Rossiter, F.R.A.S.
8. Acoustics, Light, and Heat. By William Lees, A.M.
9. Magnetism and Electricity By John Angell, Manchester.
10. Inorganic Chemistry. By Dr. W B. Kemshead, F.R.A.S.
11. Organic Chemistry. By W. Marshall Watts, D.Sc.
12. Geology. By W. S. Davis, LL.D., Derby.
13. Mineralogy. By J. H. Collins, F.G.S., Falmouth.
14. Animal Physiology. By John Angell, Manchester.
15. Zoology. By M. Harbison, Newtonards.
16. Vegetable Anatomy and Physiology. By Professor Balfour.
17. Systematic and Economic Botany By Professor Balfour.

18a Principles of Mining—Coal. By J H. Collins, F.G.S.

18b Principles of Mining—Iron. By J. H. Collins, F.G.S.

20. Navigation. By Henry Evers, LL.D., Plymouth.
21. Nautical Astronomy. By Henry Evers, LL.D.

22a Steam and the Steam Engine—Land and Marine. By Dr. Evers.

22b Steam Engine—Locomotive. By H. Evers, LL.D.

23. Physical Geography. By John Macturk, F.R.G.S.
24. Practical Chemistry. By John Howard, London.
25. Astronomy. By J. J. Plummer, Observatory, Durham.
26. Manual of Qualitative Chemical Analysis. By F. Beilstein.

Extra Volumes, Post 8vo, Cloth, 1s. 6d.

Applied Mechanics. By Henry Evers, LL.D.
Magnetism and Electricity. Enlarged Edition. By J. Angell.
Theoretical Mechanics. By J. T. Bottomley, Glasgow Univ.
Inorganic Chemistry. Enlarged Edition. By Dr. Kemshead.
[illegible]d Edition. By John Angell.
[illegible]tions. By T C. MacGinley.
[illegible]y Professor Wrightson, 2s.

[illegible]rriot Hill Works, Glasgow.

William Collins, Sons, & Co.'s Educational Works.

ADVANCED SCIENCE SERIES,

Adapted to the requirements of the South Kensington Syllabus, for Students in Science and Art Classes, and Higher and Middle Class Schools.

Post 8vo, fully Illustrated, cloth lettered, price 2s. 6d. each volume, except otherwise specified.

1. PRACTICAL PLANE AND SOLID GEOMETRY. By H. ANGEL, Islington Science School, London. 2 vols. *In the Press.*
2. MACHINE CONSTRUCTION AND DRAWING. By E. TOMKINS. Vol. I. Text, 3s. 6d. Vol. II. Plates, 7s.

3A BUILDING CONSTRUCTION—Brick and Stone, &c. By R. S. BURN, C.E. Vol. I. Text, 2s. 6d. Vol. II. Plates, 5s.

3B BUILDING CONSTRUCTION—Timber and Iron, &c. By R. S. BURN, C.E. Vol. I. Text, 2s. 6d. Vol. II. Plates, 4s.

4A PRACTICAL NAVAL ARCHITECTURE—Laying Off and Shipbuilding. By S. J. P. THEARLE, F.R.S.N.A., London. Vol. I. Text, 2s. 6d. Vol. II. Plates, 5s.

4B THEORETICAL NAVAL ARCHITECTURE. By S. J. P. THEARLE, F.R.S.N.A., London. Vol. I. Text, 3s. 6d. Vol. II. Plates, 7s.

5. PURE MATHEMATICS. By E. ATKINS, Leicester. 2 vols.
8. ACOUSTICS, LIGHT, AND HEAT. By WILLIAM LEES, A.M.
9. MAGNETISM AND ELECTRICITY. By F. GUTHRIE, B.A., Ph.D., Royal School of Mines, London. 3s.

10A INORGANIC CHEMISTRY—Vol. I. Non-Metals. By Professor T. E. THORPE, Ph.D., F.R.S.E., Yorkshire College of Science, Leeds. 3s.

10B INORGANIC CHEMISTRY—Vol. II. Metals. By Prof. T. E. THORPE, Ph.D., F.R.S.E., Yorkshire College of Science, Leeds. 3s.

13. MINERALOGY. By J. H. COLLINS, F.G.S., Falmouth. 2 vols.
14. ANIMAL PHYSIOLOGY. By J. CLELAND, M.D., F.R.S., Professor of Anatomy, Glasgow University.

19A METALLURGY—Vol. I. Fuel, Iron, Steel, Tin, Antimony, Arsenic, Bismuth, and Platinum. By W. H. GREENWOOD, A.R.S.M.

19B METALLURGY—Vol. II. Copper, Lead, Zinc, Mercury, Silver, Gold, Nickel, Cobalt, and Aluminium. By W. H. GREENWOOD, A.R.S.M.

20. NAVIGATION. By HENRY EVERS, LL.D., Newcastle-upon-Tyne.
22. STEAM AND THE STEAM ENGINE—Land, Marine, and Locomotive. By HENRY EVERS, LL.D., Newcastle-upon-Tyne. 3s.
23. PHYSICAL GEOGRAPHY. By JOHN YOUNG, M.D., Professor of Natural History, Glasgow University.

ARTS SERIES.

PRACTICAL PLANE GEOMETRY, with 72 Plates, and Letterpress Description. By E. S. BURCHETT, National Art Training Schools, South Kensington, &c. Royal 8vo, cloth, 6s. 6d.

PRACTICAL PLANE GEOMETRY, with 72 Plates, and Letterpress Description. By E. S. BURCHETT, National Art Training Schools, South Kensington, &c. Cheap edition, cloth limp, 4s. 6d.

London, Edinburgh, and Herriot Hill Works, Glasgow.

Collins' School Series.

MANUAL

OF

MODERN GEOGRAPHY:

PHYSICAL, POLITICAL, AND COMMERCIAL.

BY

W. LAWSON, F.R.G.S.,

ST. MARK'S COLLEGE, CHELSEA.

With Coloured Maps and Illustrations.

BIBLIOTHECA
MAY 1879
BODLEIANA

LONDON AND GLASGOW:
WILLIAM COLLINS, SONS, & COMPANY.
1879.

201. g. 202.

PREFACE.

THIS MANUAL is intended to present, within reasonable limits, a complete outline of the Descriptive Geography of the globe—physical, political, and commercial. Complaint is often made, and with some show of reason, that text-books are too full of facts. In a subject like geography, to which every day as it passes contributes new materials, it is difficult to avoid giving a number of details, if the work has to make any pretensions to completeness. An attempt has been made, however, to give prominence to permanent facts, such as the natural features of a country, while many details in political geography have either been omitted, or have been glanced at very cursorily. In the arrangement of the facts, also, it has been my endeavour to show the relation between one part of the geography of a country and another; thus the minerals have always been taken along with the surface, and not with the animal and vegetable productions, as is usually the case. It is hoped that in this way the study of the subject may be something more than a mere exercise of memory.

W. L.

ST. MARK'S COLLEGE, CHELSEA,
December, 1878.

WITH THE PUBLISHERS COMPLIMENTS

CONTENTS.

	PAGE
THE WORLD,	9

EUROPE.

THE BRITISH ISLANDS—	
England and Wales,	25
Scotland,	64
Ireland,	87
The United Kingdom,	105
NORWAY AND SWEDEN,	107
DENMARK,	113
HOLLAND, or the NETHERLANDS,	116
BELGIUM,	122
FRANCE,	128
SPAIN,	142
PORTUGAL,	151
ITALY,	156
SWITZERLAND,	168
GERMAN EMPIRE,	174
Prussia,	180
Saxony,	185
Bavaria,	187
Wurtemberg,	188
Baden,	189
Alsace-Lorraine,	190
AUSTRO-HUNGARIAN EMPIRE,	192
TURKEY, or the OTTOMAN EMPIRE,	200
GREECE,	208
THE RUSSIAN EMPIRE,	212
BRITISH POSSESSIONS IN EUROPE—	220
The Channel Islands,	220
Heligoland,	221
Gibraltar,	221
Malta,	222

ASIA.

	PAGE
ASIATIC RUSSIA—	232
Caucasia,	232
Russian Turkestan,	232
Siberia,	232
THE CHINESE EMPIRE—	236
China Proper,	236
Corea,	242
Manchooria,	242
Mongolia,	243
Thibet,	244
JAPAN,	246
EASTERN TURKESTAN,	249
WESTERN TURKESTAN,	250
AFGHANISTAN,	251
BELOOCHISTAN,	252
PERSIA,	253
ASIATIC TURKEY,	256
Palestine,	260
ARABIA,	262
BRITISH POSSESSIONS IN ASIA—	
Aden,	264
Ceylon,	264
India,	265
Straits Settlements,	286
Labuan,	287
Hong-Kong,	287
INDO-CHINESE PENINSULA,	288
EAST INDIAN ARCHIPELAGO,	292

AFRICA.

	PAGE
Barbary States,	303
Egypt—	
Egypt Proper,	306
Nubia,	310
Region of the Upper Nile.	312
Abyssinia,	312
The Sahara,	313
Soudan,	314
Western Africa,	316
Central Africa,	317
Eastern Africa,	319
British Possessions in Africa—	
West African Settlements,	320
South African Possessions,	322
Islands,	329
Madagascar,	331

NORTH AMERICA.

Greenland,	339
British North America—	
Dominion of Canada,	340
Newfoundland,	352
United States of America,	353
Mexico,	364

CENTRAL AMERICA.

General Description,	368

THE WEST INDIES.

British West Indies,	371
The Bermudas,	375
Honduras,	376

ASIA.

Asiatic Russia— . . . .
Caucasia, ...
Russian Turkestan, . . .
Siberia, ...

The Chinese Empire— . . .
China Proper, ...
Corea, ...
Manchooria, ...
Mongolia, ...
Thibet, ...

Japan, ...

Eastern Turkestan, . . .

Western Turkestan, . . .

Afghanistan, ...

Beloochistan, ...

Persia, ...

Asiatic Turkey, ...
Palestine, ...

Arabia, ...

British Possessions in Asia—
Aden, ...
Ceylon, ...
India, ...
Straits Settlements, . . .
Labuan, ...
Hong-Kong, ...

Indo-Chinese Peninsula, . .

East Indian Archipelago, .

SOUTH AMERICA.

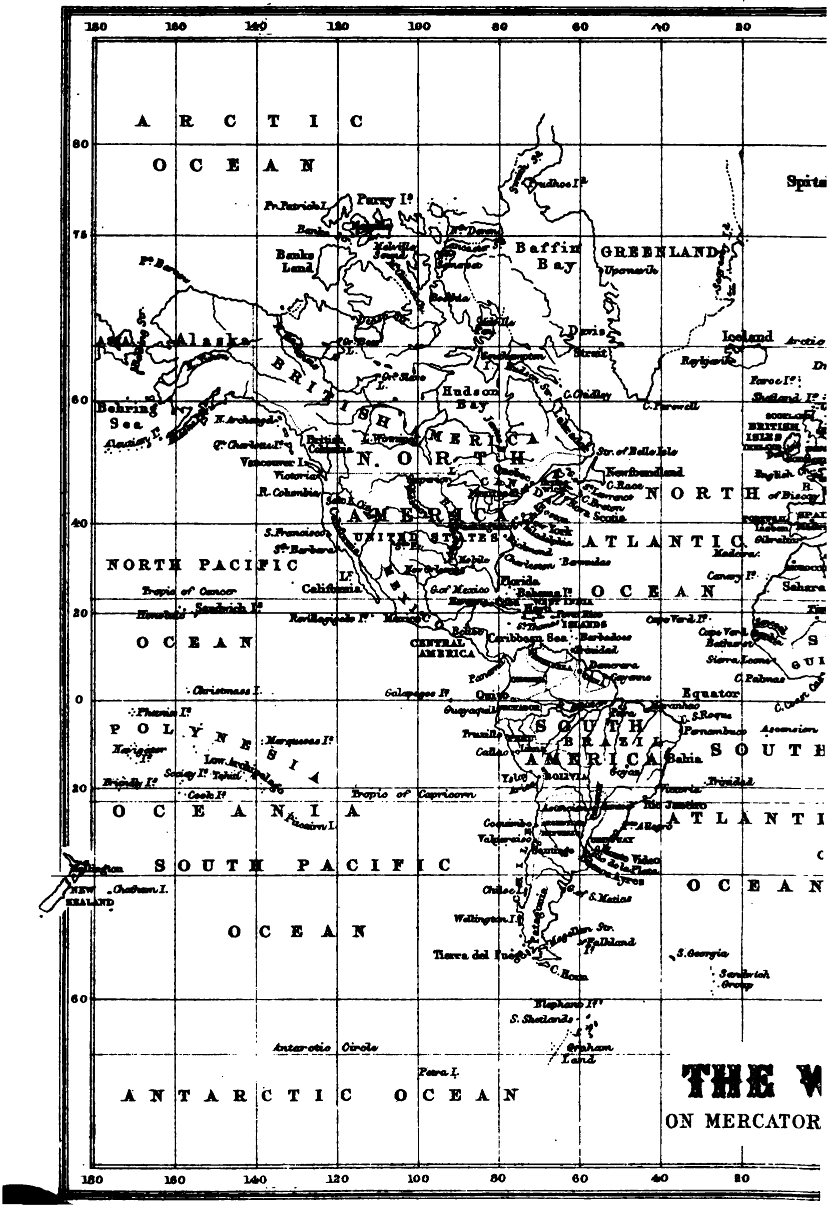
	PAGE
ECUADOR,	385
COLOMBIA, OR NEW GRANADA,	386
VENEZUELA,	387
GUIANA,	389
BRAZIL,	390
PERU,	395
BOLIVIA,	398
CHILI,	401
THE ARGENTINE REPUBLIC,	404
PARAGUAY,	408
URUGUAY,	408
PATAGONIA,	409
THE FALKLAND ISLANDS,	410

AUSTRALASIA.

AUSTRALIA,	411
TASMANIA,	425
NEW ZEALAND,	427
THE FIJI ISLANDS,	430

OCEANICA.

MELANESIA,	431
POLYNESIA,	433



THE W
ON MERCATOR
A R C T I C
O C E A N
Parry Iˢ
Banks Land
Baffin Bay
GREENLAND
Davis Strait
Iceland
Spits
Alaska
Behring Sea
Hudson Bay
BRITISH
N. O R T H
A M E R I C A
UNITED STATES
Vancouver I.
California
Newfoundland
N O R T H
A T L A N T I C
O C E A N
NORTH PACIFIC
O C E A N
Sandwich Iˢ
CENTRAL AMERICA
Caribbean Sea
Equator
S O U T H
A M E R I C A
B R A Z I L
BOLIVIA
Bahia
Rio Janeiro
Valparaiso
Santiago
Tierra del Fuego
C. Horn
Falkland Iˢ
S. Georgia
P O L Y N E S I A
O C E A N I A
S O U T H   P A C I F I C
O C E A N
NEW ZEALAND
Chatham I.
S O U T H
A T L A N T I
O C E A N
Sahara
Tropic of Cancer
Tropic of Capricorn
Antarctic Circle
A N T A R C T I C   O C E A N
Graham Land

20 40 60 80 100 120 140 160 180
80 75 60 40 20 0 20 40 60
ARCTIC OCEAN
North East C.
Nova Zembla
Kara Sea
Bear I.
North Cape
Lapland
Liakov Is or New Siberia
SIBERIA
RUSSIAN EMPIRE
RUSSIA
Moscow
Sea of Okhotsk
Behring Sea
ASIA
L. Baikal
Sea of Aral
Balkash
Black Sea
TURKESTAN
CHINESE EMPIRE
PERSIA
TIBET
INDIA
Calcutta
Bombay
Madras
Arabian Sea
Bay of Bengal
Ceylon
Aden
Socotra
Pekin
Japan
Jedo
Shanghai
Amoy
Formosa
Canton
Hong Kong
China Sea
Philippine Islands
NORTH PACIFIC OCEAN
Marianne Is
Caroline Is
Marshall Is
Pelew Is
Maldive Is
Singapore
Borneo
Celebes
Moluccas
Papua or New Guinea
Solomon Is
Java
Batavia
Sunda Islands
Timor
Seychelles
Chagos
Amirante Is
Comoro Is
INDIAN OCEAN
Mauritius
Bourbon
Great Desert
Lake Tanganyika
Port Natal
Cape Town
Good Hope
Port Elizabeth
AUSTRALIA
Western Australia
South Australia
New South Wales
Perth
Brisbane
Sydney
Adelaide
Melbourne
Tasmania
King George Sd
New Hebrides
Feejee Is
New Caledonia
Norfolk I.
Wellington
NEW ZEALAND
Gough I.
Crozet Is
St Paul
Amsterdam I.
Kerguelen I.
McDonnell Is
Bouvet Is
Royal Company Is
Macquarie I.
Emerald I.
Clarie Ld
Kemp Ld
Enderby Ld
Balleny Is
Supposed Antarctic Continent
St Victoria
ORLD
PROJECTION.

MANUAL

OF

MODERN GEOGRAPHY.

THE WORLD.

THE WORLD on which we live is a globe or sphere isolated in space. A **Map** is a picture of the world, or of some part of it. In a map of the world, the two circular portions, known respectively as the Eastern and Western Hemispheres, represent the two sides of the globe.

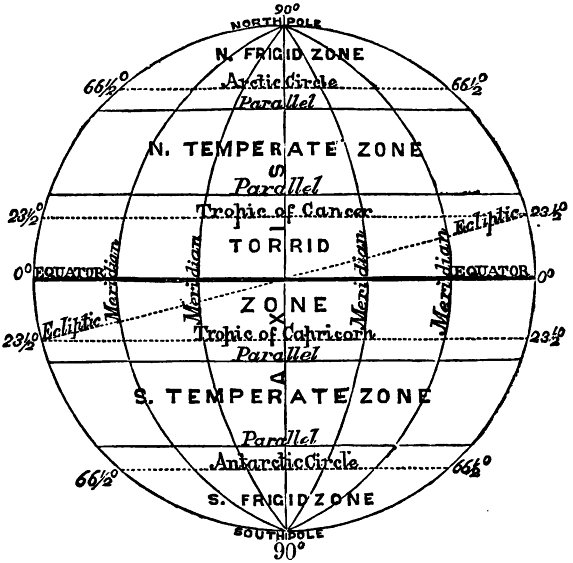
The distribution of land and water upon the earth's surface can only be accurately represented upon a globe. But globes are expensive; besides they are not so convenient as an atlas, hence maps are more commonly used. If we could split an ordinary wooden globe in two, and were to lay the two halves side by side on their flat surfaces, we should have something like a map of the world; but not exactly. For the two halves would present curved surfaces, while a map of the world is flat. To obtain this flat surface, the parts of the globe near the equator are somewhat distorted, while the equator itself, which is in reality a circle, is represented as a straight line.

DEFINITIONS.—The **Equator** is so called because it divides the surface of the globe into two equal parts. The points equally distant from the equator, at the extreme north and south, are called **Poles**. The term *pole* is derived from a Greek word which signifies a pivot or hinge, because the earth, in its daily revolution, seems to turn upon the two poles as on two pivots.

Every circle may be divided into 360 equal parts called degrees, the distance from the equator to either pole, therefore, being one-quarter of a circle, will contain 90°. Of course the length of a degree depends upon the size of the circle; at the equator the length of a degree is about $69\frac{1}{10}$ English miles.

The position of any place upon the earth's surface is determined by its latitude and longitude. **Latitude** is the distance north or south of the equator; **Longitude** is the distance east or west of the first meridian.

On an ordinary globe there are a number of circles drawn parallel to the equator, ten or twenty degrees apart, these are represented in a map of the world by the curved lines which run east and west, and are termed lines of latitude. The lines running at right angles to these, and which converge in the poles, are termed meridians (Latin, *meridies*, mid-day), because all places through which any one passes have noon, or mid-day, at the same time. In English maps the first meridian passes through Greenwich, but this is not the case in other countries; in France the first meridian passes through Paris; in Germany, through Berlin. It will be seen that no place can be more than 90° north or south latitude; but a place may be 180° east or west longitude; and further, that 180° east is the same as 180° west; for if two persons started from Greenwich, and travelled at the same rate, the one towards the east, and the other towards the west, they would meet at the meridian of 180°.


90°
NORTH POLE
N. FRIGID ZONE
66½°
Arctic Circle
66½°
Parallel
N. TEMPERATE ZONE
Parallel
23½°
Tropic of Cancer
Ecliptic
23½°
TORRID
0°
EQUATOR
EQUATOR
0°
Meridian
Meridian
Meridian
Meridian
ZONE
Ecliptic
23½°
Tropic of Capricorn
23½°
Parallel
S. TEMPERATE ZONE
Parallel
66½°
Antarctic Circle
66½°
S. FRIGID ZONE
SOUTH POLE
90°

MATHEMATICAL DIVISIONS OF THE EARTH.

The **Tropic of Cancer** is 23½° north of the equator; the **Tropic of Capricorn** is 23½° south of the equator.

That part of the world which lies between the tropics is the only part where the sun, at some time during the year, is in the zenith, or directly overhead. In spring the sun is vertical at the equator; as the year advances, it appears to travel further and further northward until midsummer, when it is vertical at the Tropic of Cancer. It then appears to turn back, and on the 23rd of September is again vertical at the equator. It then proceeds southward, and reaches the Tropic of Capricorn in midwinter, when it again *turns* northward: the word *tropic* means "to turn."

The **Arctic Circle** is 23½° from the North Pole; the **Antarctic Circle** is 23½° from the South Pole.

In all parts of the world, between the Arctic and Antarctic Circles, the sun rises and sets every day, though the days are not all of equal length. Within those two circles the sun sometimes does not rise for days, weeks, and even months; and at the poles the days and nights are of six months' duration.

The tropics of Cancer and Capricorn, together with the Arctic and Antarctic Circles, divide the surface of the globe into five zones or belts, which differ very much from each other in climate. These are known as the **Torrid Zone**, lying between the Tropics; the **North Temperate Zone**, and the **South Temperate Zone**, lying between the Tropics and the Polar Circles; and the two **Frigid Zones**, lying within the Arctic and Antarctic Circles respectively.

It will readily be imagined that the region within the Tropics will be very hot, because there the sun is always either vertical or nearly so. On the other hand, it must be very cold within the Polar Circles, because the sun sometimes never appears above the horizon for weeks together; and when it does appear, never rises very high, and consequently has not much power.

The **diameter** of the earth, or measure straight through it, is 7912 miles; its **circumference**, about 25,000 miles, and its **surface** contains an area of nearly 200 million square miles. Of this area, the land occupies little more than 50 million square miles, or about one-fourth of the whole

A glance at the map will show also that the greater part of the land lies north of the equator, only about one-fourth being in the southern hemisphere.

LAND AND WATER.—The land has been grouped into six large masses called Continents. There are three northern continents: Asia, Europe, and North America; and three southern continents: Australia, Africa, and South America.

It has been noticed that the northern continents are much more indented than the southern continents; and that they each terminate in the south in three points, while the southern continents all terminate in one point. Thus in Asia we have the peninsulas of Malaya, Hindostan, and Arabia; in Europe, the peninsulas of Greece, Italy, and Spain; in North America, the peninsula of Florida, the isthmus of Central America, and the peninsula of California.

The water upon the earth's surface is divided into five oceans: the Pacific Ocean, the Atlantic Ocean, the Indian Ocean, the Arctic Ocean, and the Antarctic Ocean.

The **Pacific** has an area half as large again as all the land put together. It is said to be less subject to storms than the other oceans, and hence its name. The **Atlantic** is valley-like in shape; the opposite shores seem, as it were, to correspond to each other. The **Indian Ocean** is triangular, but the apex of the triangle is split in two by the peninsula of Hindostan.

In Asia and Europe the chief mountain chains run east and west; in America, north and south; in Africa and Australia, round the margin of the continents. Speaking generally, the elevation of the earth's surface goes on increasing from the poles to the tropics; thus the culminating point in the Old World is **Mount Everest,** in the Himalayas, which reaches 29,002 ft.; in the New World, the highest summit is **Aconcagua,** in Chili, which reaches 23,910 ft.

It is a popular notion that the greatest depth of the ocean is equal to the greatest elevation on land; recent investigations seem to confirm this idea. The deepest part of the Atlantic seems to lie between St. Thomas' Island and the Bermudas, where the *Challenger* found a depth of 3875 fathoms. The deepest part of the Pacific, and indeed the greatest depth yet ascertained, is between the Caroline and Ladrone Islands, where the sounding line announced 4575 fathoms.

CLIMATE.—By the *climate* of a place is meant the general state of the weather; and the two chief things to be noticed are the temperature and the amount of moisture contained in the atmosphere. The temperature of a place, as a rule, depends upon its latitude: the further distant any country is from the tropics the colder we should expect it to be. The amount of moisture contained in the air depends generally upon the proximity of the sea.

There are, however, several modifying causes that have to be taken into account when we are considering the climate of any place. Among these are: The nature of the surface, the proximity of large bodies of water, prevailing winds, and oceanic currents. The more elevated the surface of a country is, the colder it is; the presence of large bodies of water causes the climate not only to be more humid, but also less extreme than it otherwise would be; the winds and currents raise or lower the general temperature according to the quarter from which they come. The *Gulf Stream* and the prevailing south-westerly winds have a marked effect in raising the general temperature of the countries of Western Europe.

PLANTS AND ANIMALS.—A moist and warm climate is most suitable to vegetable life; a dry and hot climate brings animal life to greatest perfection. Hence if we compare the productions of the Old and New Worlds, we shall find that while the latter is distinguished for the luxuriance and leafiness of its vegetation, the former is remarkable for the size and strength of its animals.

The development of animal and vegetable life increases in energy and variety from the poles to the tropics; this law, however, seems reversed with regard to marine animals. Animal life is seldom very abundant on islands. When Captain Cook discovered New Zealand, a wild dog was the largest animal he met with. On the other hand, islands are generally clothed with luxuriant vegetation. Africa, the hottest and least humid of all the continents, is remarkable for the number and size of its animals; tropical America, and the East Indian Archipelago, are remarkable for exuberant vegetation.

Races of Men.—While almost all the inferior animals are more or less restricted to certain regions of the globe, man is able to adapt himself to all regions and to all climates.

1. Caucasian.

2. Mongolian.

3. Negro (pure type).

4. Malayan.

5. Otto Indian of North America.

RACES OF MANKIND.

The whole human family is descended from one pair, yet from the dawn of history it has always been possible to divide men into certain races, differing from each other not only in outward appearance, but also in intellectual and moral characteristics. These different races are usually grouped under three main types: Europeans, Mongolians, and Negroes; while two other classes, the Malays and Indians of America, which some reckon distinct varieties, may be looked upon as sub-varieties of the Mongolian type.

The **European** races, of which an Englishman may be taken as a type, not only inhabit the greater part of Europe, but include the inhabitants of Arabia, Persia, Afghanistan, Beloochistan, and Hindostan. Whether we should include the inhabitants of Georgia, Circassia, and other dwellers in the region of the Caucasus Mountains, appears doubtful. The **Mongolians** embrace the nations of the whole of Asia—except the countries already mentioned—as well as the natives of Hungary, and the Turks, Lapps, and Fins of Europe. The **Negro** type includes the majority of the African races. Of the Malay races there are two distinct branches: the *Malays* proper, who are of a brown colour, and inhabit the Malay Peninsula, Madagascar, the islands of the Eastern Archipelago and Polynesia, including New Zealand; and the *Papuans*, a black race, who inhabit New Guinea, Australia, New Ireland, and the islands between it and New Caledonia. The inhabitants of the Fiji Islands belong to this race, but it does not extend further eastward.

RELIGION.—The total population of the globe is estimated at 1,400,000,000, not one-third of whom are Christians. The religion professed by the greatest number of the human race is **Buddhism,** which prevails in China, Japan, Thibet, Further India, and other parts of Asia. **Brahminism** prevails in Hindostan. Next in importance among non-Christian religions is **Mohammedanism.**

The Hindoos worship the Supreme Being under three forms—*Brahma*, *Vishnu*, and *Siva*. Their original conception of God was pure and elevated, but it has been disfigured by numerous fables, and consists of a number of idolatrous rites. The religion is named Brahminism, from Brahma the chief person in Indian mythology. The Brahmins are priests, and form a distinct caste among the Hindoos. These priests are the sole depositaries and interpreters of the Vedas, or sacred books. *Buddha*, the founder of Buddhism, was a Brahmin, who lived about one thousand years before Christ. He introduced several changes into the Hindoo religion, and his followers devoted themselves to severe abstinence, religious exercises, and constant contemplation. The worship of Buddha being forbidden in India, it spread into Thibet, China, Japan, and Ceylon. The monastic feature became a distinguishing characteristic of it; its priests were termed lamas, and from this priesthood sprang the hereditary dignity of the *Grand Lama*, who resides at Lassa in Thibet. Mahomet, or Mohammed, the founder of Mohammedanism, was born at Mecca about the year A.D. 570, and died at Medina about A.D. 632.

ARCTIC
Jan Mayen
ICELAND
Reikiavik
Arctic Circle
Lofoden Isles
Bodoe
Vigten I.
Drontheim
Christiansund
Stadtland
Hernosand
Faroe Is.
Shetland Is.
Orkney Is.
Rockall
St. Kilda
C. Wrath
Wick
Bergen
Stavanger
Christiansand
The Naze
Skagen
Gottenburg
Stockholm
Carlscrona
Christiania
BRITISH ISLANDS
Londonderry
Aberdeen
Edinburgh
NORTH SEA
R. Shannon
Galway
IRELAND
Dublin
Liverpool
Manchester
Newcastle
York
C. Clear
Cork
St. Georges Chanl.
Bristol Chanl.
Birmingham
Lands End
Scilly Is.
Heligoland
Amsterdam
Rotterdam
Hamburg
Berlin
Stettin
Magdeburg
Cologne
Leipzig
Dresden
Frankfort
English Channel
Cherbourg
Havre
Brest
Rouen
Paris
Nantes
R. Loire
Orleans
Tours
Dijon
FRANCE
Rochefort
Bordeaux
Bay of Biscay
C. Ortegal
Corunna
C. Finisterre
Oporto
R. Douro
Coimbra
Lisbon
R. Tagus
C. Roca
Setubal
C. St. Vincent
PORTUGAL
Madrid
SPAIN
Valencia
Seville
Cadiz
C. Trafalgar
Gibraltar
Str. of Gibraltar
Alicant
Carthagena
Barcelona
Toulouse
Pyrenees Mts.
Marseilles
Nice
Toulon
G. of Lyons
Balearic Is.
Minorca
Majorca
Iviza
Sardinia
Corsica
Str. of Bonifacio
Genoa
Berne
Milan
R. Po
Venice
ADRIATIC SEA
Rome
Naples
Palermo
Sicily
Malta
C. Passaro
C. Spartivento
Algiers
MEDITERRANEAN
Vienna
Presburg
Buda Pest
Prague
Munich
Cracow
Warsaw
Danzig
Belgrade
ATLANTIC OCEAN
AFRICA

William Collins, Sons & Co.

OCEAN
Nova Zembla
Kolguev I.
C. Kanin
Lapland
Kola
Kandalaksha
White Sea
Kemi
Archangel
R. Petchora
Uleaborg
Onega
Finland
L. Onega
L. Ladoga
St. Petersburg
Novgorod
Vologda
Kostroma
Tver
Vladimir
Moscow
N. Novgorod
Kazan
Simbirsk
Perm
Riga
Revel
Pskov
Vilna
Minsk
Bobruisk
Pinsk
Smolensk
Tula
Orel
Tambov
Penza
Saratov
Kursk
Kharkov
Kiev
Poltava
R. Dnieper
Odessa
Kherson
Crimea
Sea of Azov
Azov
Taganrog
R. Don
R. Volga
Astrakhan
Orenburg
R. Ural
Uralsk
CASPIAN SEA
Georgievsk
Kislar
Tiflis
Baku
BLACK SEA
Sinope
Sebastopol
Simferopol
Varna
Bukharest
Constantinople
ASIA MINOR
Smyrna
ARCHIPELAGO
Candia
Cyprus
Beyrut
SYRIA
EUROPE.
English Miles
0 50 100 200 300 400 500
30
35
40
45

ndon & Glasgow

EUROPE.

GENERAL DESCRIPTION.

Boundaries and Extent.—Europe is bounded on the north by the Arctic Ocean; west, by the Atlantic; south, by the Mediterranean, the Black Sea, and the Caucasus Mountains; east, by the Caspian Sea, the Ural River, and the Ural Mountains. Its extreme length, from Cape St. Vincent to the mouth of the river Kara, is nearly 3400 miles; its breadth, from Nordkyn to Cape Matapan, is 2400 miles; and its entire area, including the islands, is about 3,800,000 square miles.

Europe lies between the parallels of 36° and 71° north latitude, and extends from 9° 30′ west longitude to 68° 30′ east longitude. If we include the British Islands, the western limit would be Dunmore Head, in the south-west of Ireland, which is 10° 30′ west. Next to Australia, Europe is the smallest of the continents, being not one-third the size of Africa, and only about one-fifth of Asia.

Countries.—The following is a list of the countries into which Europe is divided, with the area, population, and capital of each state:—

Countries.	Area in Sq. Miles.	Population.	Capital.
The British Islands, -	120,850	31,500,000	London.
Norway, - - - - -	122,280	1,780,000	Christiania.
Sweden, - - - - -	171,750	4,300,000	Stockholm.
Denmark, - - - - -	14,760	1,860,000	Copenhagen.
Holland, - - - - -	12,680	3,700,000	Amsterdam.
Belgium, - - - - -	11,370	5,250,000	Brussels.
France, - - - - -	204,000	36,000,000	Paris.
Portugal, - - - - -	34,500	4,300,000	Lisbon.
Spain, - - - - - -	196,000	16,800,000	Madrid.
Italy, - - - - - -	114,400	26,800,000	Rome.
Switzerland, - - - -	16,000	2,670,000	Berne.
Germany, - - - - -	208,700	41,000,000	Berlin.
Austria, - - - - -	241,000	36,000,000	Vienna.
Turkey, - - - - -	150,000	10,500,000	Constantinople.
Greece, - - - - -	19,350	1,458,000	Athens.
Russia, - - - - -	2,000,000	73,500,000	St. Petersburg.

COAST-LINE.—Europe is remarkable for its irregularity of outline, and, as a consequence, its numerous bays, peninsulas, and capes. The climate is therefore more equable than it would otherwise have been; and most of the various countries possess good harbours, and are enabled to follow commercial pursuits. The total length of coast-line is nearly 20,000 square miles, which is about one mile of coast to 190 square miles of surface.

The **Sea of Kara**, in the extreme north-east, is land-locked by the group of islands known as **Nova Zembla.** From this point the coast runs south-west to the **White Sea**, and then north-west to **Nordkyn.** We have now reached the Scandinavian peninsula, which comprises the countries of Norway and Sweden. The coast of Norway is exceedingly rugged, deeply indented, and is skirted by a chain of rocks and islets called Skargard (*coast guard*). Norway terminates on the south in the **Naze**, and is separated from Denmark by **Skager Rack.** Passing through this channel we turn south into **Cattegat**, and then reach the Sound which leads into the Baltic.

The entrance to the Baltic is by three channels: the **Sound**, between Sweden and the island of Zealand; the **Great Belt**, between Zealand and Funen; and the **Little Belt**, between Funen and Jutland.

The **Baltic**, including the Gulfs of Bothnia and Finland, has an area of 135,000 square miles. Its western shore is rocky, but not high; while on the east the shores are low and sandy. The Baltic is generally shallow, especially on the western side; and owing to the number of rivers which pour into it, the water is not very salt. Among the islands belonging to it are the Aland Islands at the entrance of the Gulf of Bothnia, and Gothland, lying further south.

Denmark affords an example of a peninsula pointing to the north; such examples are rare: it terminates in the **Skaw.** To the west of Denmark is the **North Sea**, land-locked by the British Islands. It is of considerable depth in the north, but shallows towards the south. The coast from the mouth of the Elbe to the Strait of Dover is low, and in some places is protected by dykes from the encroachment of the sea. The **Strait of Dover**, which connects the North Sea with the English Channel, is about 20 miles wide at the narrowest point, and about 200 ft. deep. It is proposed to connect England and France by a railway tunnel running underneath the strait. France has an extensive coast-line, but its shores contain few indentations. On the north there is a small peninsula which terminates in **Cape La Hague,** and in the north-west there is **Point du Raz,** to the south of Brest. We have now reached the **Bay of Biscay,** bounded on the east by France, and on the south by Spain. The *coast* of the Spanish peninsula has few indentations, and on the north and west the shores are rugged. In the north-west are **Cape Ortegal** and **Cape Finisterre** (*Lands End*). **Cape Roca,** in Portugal, is the most westerly point in the continent. To the south is **Cape St. Vincent,** and then the coast curves round to the **Strait of Gibraltar,** which is about 13 miles wide. **Cape Tarifa,** to the west of Gibraltar Rock, is the most southerly point in Europe. Passing through the channel we enter the Mediterranean Sea.

The **Mediterranean** covers an area of about one million square miles, and is in some parts of great depth. Its basin is divided into two parts by a submarine ridge which runs from Sicily to Cape Bon, on the coast of Africa, and here the depth is from 50 to 500 ft. But between Spain and Sardinia a depth of 9000 ft. has been ascertained, and equal, if not greater, depths have been found in the eastern basin. At the Strait of Gibraltar the depth is 1000 ft. Owing to excessive evaporation, and to the few large rivers which flow into it, the water of the Mediterranean is more salt than the Atlantic. A current constantly sets in from the Atlantic through the strait, and it has been ascertained that an under-current of salter, and therefore heavier, water flows out from the Mediterranean into the Atlantic. Owing to the narrow channel through which it communicates with the ocean, the tides in the Mediterranean are scarcely felt.

Following the east coast of Spain we leave the **Balearic Islands** to our right. Passing **Cape Creux** and the **Gulf of Lyons** we reach the **Gulf of Genoa** and the coast of Italy. To the south lie the islands of **Corsica** and **Sardinia,** separated by the **Strait of Bonifacio.** Italy is the second of the three peninsulas met with in the south of Europe. It terminates on the south-west in **Cape Spartivento,** and is separated from **Sicily** by the **Strait of Messina.** On the east side Italy is washed by the **Adriatic Sea,** which is connected to the Mediterranean by the **Strait of Otranto.** The third peninsula is formed by Turkey and Greece. To the south is the island of **Candia.** To the east of Greece is the **Archipelago** (*Chief Sea*), so named by the ancient Greeks; and since this sea is studded with islands, the word *archipelago* is now generally applied to clusters, or groups, of islands. The Strait of the **Dardannelles,** anciently called the *Hellespont,* leads from the Archipelago to the **Sea of Marmora;** and the **Strait of Constantinople,** anciently called the *Bosphorous*, connects the Sea of Marmora with the Black Sea.

The **Black Sea** is rather larger than the Baltic, having an area of 180,000 square miles; it is also deeper and more salt. On the north side is the peninsula of the **Crimea** connected to the mainland by the isthmus of **Perikop**; and north of the Crimea is the **Sea of Azof**, which communicates with the Black Sea through the **Strait of Yenikale**.

SURFACE.—Taken as a whole the surface of Europe is level, or only slightly undulating. Two-thirds of it are included in the *Great Plain* which extends from the Ural Mountains to the Atlantic. In its eastern portion the plain extends from the Black Sea to the Arctic Ocean, but it narrows towards the west, and includes Prussia, Denmark, Holland, Belgium, the north of France, and the eastern portion of England. The whole of this plain has but a slight elevation; it is also covered in many parts with swamps, small lakes, and stretches of sand, and it appears not improbable that at some former period it formed the bed of a vast inland sea, of which the Baltic is now the only considerable remaining portion. The mountains of Europe lie chiefly in the south, south-west, and north-west, and may be arranged in nine groups: the Alps, Balkans, Carpathians, the mountains of Germany, France, Spain, and Scandinavia; the Urals and the Caucasus Mountains.

The **Alps** stretch in a semicircle round the north of Italy from the shores of the Gulf of Genoa to the meridian of 15° east. In their western portion—between Italy and France—they consist of a single chain about 100 miles broad, known in different parts as the *Maritime*, *Cottian*, and *Graian Alps*. South of Switzerland they form a double chain, separated by the upper course of the Rhone. On the south is the *Pennine Chain*, with the summit of **Mount Blanc**, rising to a height of 15,760 ft. On the north side of the river are the *Bernese Alps*. These two chains unite in the mountain mass of **St. Gothard**. Stretching east from St. Gothard are the *Rhætian Alps*, which soon afterwards again divide, the northern branch being called the *Noric Alps*, while on the south are the *Carnic*, *Julian*, and *Dinaric Alps*. The snow line in the Alps is between 8000 and 9000 ft. in height, and as a great portion of the system exceeds this elevation, glaciers are numerous and avalanches frequent. The **Apennines**, which run through Italy from north to south, and the **Jura** mountains, which divide Switzerland from France, may be looked upon as offshoots of the Alpine system.

The **Balkans** stretch across Turkey from the Dinaric Alps to Cape Emineh on the shores of the Black Sea. Their average elevation is only about 3000 feet, but the group of **Shar Dagh**, near the centre of the country, attains an elevation of 10,000 feet. Various branches spring off from the main chain; one of these, the *North Balkans*, reaches the banks of the Danube at the *Iron Gate*. On the opposite side of the river the mountains are called the **Carpathians**. This chain almost forms a semicircle and meets the Danube again near Presburg. The Carpathians are not very lofty, but the **Tatra** group, which rises where the chain is cut by the 20th meridian, contains several summits 10,000 feet in height. The country enclosed by the Carpathians is called the *Plain of Hungary*.

The mountains of Germany include various groups and hill ranges which diversify the tract of country extending from the Oder to the Rhine, and from the Danube to the parallel of 52° north. In this district lies the *Plateau of Bohemia*, separated from Prussia by the **Riesen-gebirge** and **Erz-gebirge** Mountains. To the north-west, between the Elbe and Weser, are the **Harz** Mountains. In South Germany the *Plateau of Bavaria* has an elevation of 1600 feet, and in its western part it rises into a range of heights called the **Schwarz Wald**, or Black Forest. Crossing the Rhine we meet with the **Vosges**, a parallel chain, which for some distance form a boundary between Germany and France.

The mountains of France include—besides the border chains of the Pyrenees, Alps, Jura, and Vosges Mountains—the **Cevennes** and **Auvergne** Mountains. The Auvergne Mountains are of volcanic origin, and the extinct craters and ancient lavas can still be distinctly traced. **Puy de Sancy**, in the Auvergne Mountains, about 6000 feet in height, is the culminating point in the interior.

The mountains of Spain include the Pyrenees and various other chains which run parallel to it. The **Pyrenees** have an average elevation of 8000 feet, but a score of summits rise 2000 feet above this, and the peak of Nethou, or **Maladetta**, attains a elevation of 11,170 feet. The Pyrenees are very steep on the French side; but on the south, long sloping spurs lead to the valley of the Ebro. The interior of Spain is occupied by a plateau about 2000 feet in height. This is crossed by the mountains of Castile and Toledo, and bounded on the south by the **Sierra Morena.** South of the plateau, and parallel with the coast, is the **Sierra Nevada,** where **Mulhacen,** the highest summit in the peninsula, attains an elevation of 11,658 feet.

The **Scandinavian** Mountains extend through the whole length of the peninsula, from Nordkyn to the Naze. In the extreme north, however, their elevation is not great, but it increases as we follow the chain southward. Several peaks exceed 5000 feet, and **Skagstoltind,** the highest summit, exceeds 8000 feet. On the eastern side the mountains slope gently to the Baltic; but on the west they present a steep front to the Atlantic, and long inlets, called fiords, run up into the very heart of the mountains.

The **Ural** Mountains form a long narrow chain which stretches southward from the shores of the Arctic Ocean for a distance of 1200 miles. The average elevation is about 3000 feet, but about the parallel of 57° there is a depression which reduces the elevation to half that height. Throughout the whole chain there are no precipices or deep gorges; and the descent on both sides is so gradual that it is sometimes difficult to know where the plain begins.

The **Caucasus** Mountains stretch between the Black and Caspian Seas, from north-west to south-east, for a distance of 700 miles. The highest portion is in the centre, where **Elburz** reaches an elevation of 18,500 feet, or 3000 feet above the summit of Mont Blanc. The passes across the chain are few; the best known is the *Pass of Dariel*, near the 45th meridian of east longitude. This pass, known to the ancients as the "Gates of Caucasus," reaches, at its highest point, an elevation of 8000 feet, and leads between precipitous cliffs 3000 feet in height. The snow line in the Caucasus is 9500 feet high, and glaciers descend more than 2000 feet below it.

MINERALS.—The distribution of minerals in Europe is connected with the various mountain systems. The Alps, except in the eastern extensions, are remarkably deficient in mineral wealth; the Carpathians and mountains of Germany, on the other hand, are rich in mineral produce. The Erzgebirge (*metal mountains*) produce silver, lead, iron, copper, and tin. The Harz Mountains rank next in mineral wealth. The Scandinavian Mountains are especially rich in iron; and Spain contains nearly every variety of mineral produce. The Ural Mountains are rich in gold, platina, magnetic iron, and copper, but the mines are chiefly on the Asiatic side. Iron, copper, lead, and silver have been found in the Balkans, but they have been worked only to a very limited extent.

Next to Great Britain, Belgium is the richest country of Europe in **coal**. Nearly one-third of the **iron**, almost all the **tin**, one-half of the **copper** and almost one-half of the **lead**, are supplied by England. Superior iron, however, is found in the south-west provinces of Austria, as well as in Sweden. There are valuable tin mines in Saxony; and Spain and Austria supply large quantities of **quicksilver**. The mines of Almaden, in New Castile, are the richest quicksilver mines in Europe.

RIVERS.—A glance at the map will show that most of the rivers of Europe flow either to the north-west or to the south-east. This shows us that, quite apart from the positions of the great mountain systems, the surface of the Continents has two great slopes, one to the north-east, and the other in the opposite direction. The ridge which separates these two slopes, or the line of *watershed*, as it is called, if traced from the Black Forest to the Ural Mountains, would not be seen to cross any great elevation, and in the west of Russia passes through a marsh. It has been remarked that three-fourths of the running waters of Europe are drained into inland seas. Thus it has been calculated that the White Sea receives the drainage of 200,000 square miles; the Baltic 800,000, the Mediterranean only 300,000; the Black Sea and Caspian Sea, each about the same amount as the Baltic.

In the following table we give the chief rivers of Europe, their sources, the length of each in English miles, and the chief towns in their several basins.

Rivers flowing into	Source.	Length.	Towns.
The Arctic Ocean.			
Petchora, - -	Urals, - - -	900	Lobiska.
Mezen, - - -	N. of Russia, - -	400	Mezen.
Dwina, - - -	" - -	700	Archangel.
Onega, - - -	" - -	300	Onega.
The Baltic.			
Neva, - - -	Lake Ladoga, - -	46	St. Petersburg.
Dwina, - - -	Valdai Hills, - -	500	Riga.
Niemen, - -	W. of Russia, - -	400	Vilna, Tilsit, Memel.
Vistula, - -	Carpathians, - -	630	Cracow, Warsaw, Dantzig.
Oder, - - -	" - -	550	Breslau, Frankfort, Stettin.
Dal, - - -	Dovre Field, - -	250	Fahlun.
Tornea, - - -	Kiolen Mts., -	300	Tornea.
The North Sea.			
Glommen, - -	Dovre Field, - -	400	Roraas, Kongsvinger, Frederickstadt.
Elbe, - - -	Riesenbirge, - -	690	Prague, Dresden, Leipzig, Magdeburg, Berlin, Hamburg.
Weser, - - -	Thuringian Wald, -	380	Brunswick, Hanover, Bremen.
Rhine, - - -	Alps, - - -	800	Berne, Basle, Strasbourg, Frankfort, Maintz, Metz, Coblentz, Cologne, Dusseldorf, Utrecht, Leyden, Amsterdam.
Meuse, - - -	Plateau of Langres,	550	Sedan, Namur, Liege, Rotterdam.
Scheldt, - -	N. of France, - -	250	Ghent, Malines, Brussels, Antwerp.
The Atlantic.			
Seine, - - -	Plateau of Langres,	450	Troyes, Paris, Rouen, Havre.
Loire, - - -	Cevennes, - -	600	Nevers, Orleans, Tours, Nantes.
Garonne, - -	Pyrenees, - -	350	Toulouse, Bordeaux.
Douro, - - -	Celtiberian Mts., -	500	Valladolid, Salamanca, Oporto.
Tagus, - - -	" " -	600	Madrid, Toledo, Talavera, Lisbon.
Guadiana, - -	La Mancha, - -	420	Almaden, Albuera, Badajos.
Guadalquiver, -	" - -	320	Cordova, Granada, Seville.
The Mediterranean.			
Ebro, - - -	Cantabrian Mts., -	420	Vittoria, Pampeluna, Saragossa.
Rhone, - - -	Alps (Mt. St. Gothard)	600	Martigny, Geneva, Lyons, Avignon.
Arno, - - -	Apennines, - -	150	Florence, Pisa.
Tiber, - - -	" - -	210	Perugia, Rome.
Po, - - -	Alps (Monte Viso), -	450	Turin, Milan, Piacenza, Ferrara.
Maritza, - -	Balkans, - - -	320	Philippopoli, Adrianople
The Black Sea.			
Danube, - -	Schwarz Wald, -	1795	Munich, Ratisbon, Vienna, Presburg, Buda-Pesth, Belgrade, Silistria, Galatz, Ismail
Dniester, - -	Carpathians, - -	700	Kamenetz.
Dnieper, - -	W. of Russia, - -	1200	Smolensk, Kiev, Poltava, Kherson.
Don, - - -	Central Russia, -	1000	Azof.
The Caspian.			
Volga, - - -	Valdai Hills, - -	2200	Tver, Kostroma, Moscow, Nishni Novgorod, Kasan, Perm, Saratov, Astrakhan.
Ural, - - -	Urals, - - -	1150	Orenburg, Uralsk.

LAKES.—The principal lakes of Europe may be divided into two classes, those in the north and those in the south. The former are large, but the scenery is tame; in the south, the lakes are small but beautiful. Among the northern lakes may be mentioned Ladoga and Onega, in Russia; Wener, Wetter, and Maëlar, in Sweden; and Miosen, in Norway. Among the southern lakes are Constance, Geneva, and Lucerne, in Switzerland; and Maggiore, Como, and Garda, in Italy.

Ladoga, the largest lake in Europe, has an area of 6000 square miles, and is therefore nearly as large as Wales. All the lakes just mentioned have outlets and their waters are sweet and pure. Some lakes, however, have no outlets, and their waters are salt. The most intensely salt of all known lakes is **Eltonsk**, in the steppes to the east of the Volga. It has an area of 130 square miles, and furnishes two-thirds of all the salt consumed in Russia. There are two lakes in Austria which have no outlets—**Balaton** and **Neusiedler**—and both these are salt, especially the latter.

CLIMATE.—Almost the whole of Europe lies within the temperate zone, hence it suffers little from extremes either of heat or cold. Its deeply indented shores expose it to the tempering influence of the ocean, and hence the climate is rendered still more equable. South of the parallel of 45°, snow rarely falls, and the winter consists of a few months of rainy weather. Between the parallels of 45° and 55° the winter is the longest season, lasting generally from November to March or April; and autumn is very short. North of 55° the seasons are, for the most part, confined to summer and winter; and beyond the Arctic Circle the summer only lasts two or three months.

It has been noticed that the annual temperature decreases as we travel from west to east. The temperature of the western countries is raised by the prevalence of westerly winds and the influence of the Gulf Stream. In the east of Europe, on the other hand, there are no mountains to shelter the country from the cold north-east winds which sweep over the north of Asia. The countries in the south of Europe have the temperatures of their climates raised by the proximity of Africa, but this influence is modified by the presence of the Mediterranean and the elevation of land. The hottest part of the Continent is in the south-west; in Portugal the heat is often very oppressive. The average annual quantity of rain is, as we might expect, greatest in the south and south-west, but in no country is there more than falls in some parts of England. But though the average quantity of rain which falls in the south of Europe is about the same as in the British Islands, the average number of rainy days is much less. In Ireland, the rain falls about 208 days in the year; in England and Central Europe, about 150 is the average; while on the shores of the Mediterranean the number of wet days is not more than 80 or 90.

VEGETATION.—The soil of Europe is, upon the whole, very productive. It has been estimated that four-sevenths of the entire surface is adapted to the growth of wheat, and about three-sevenths to the culture of the vine. In the extreme north of Europe the ground is covered with a profusion of mosses, lichens, and a few shrubs, but there is an entire absence of all trees except birch. Forests of pine and fir clothe the mountains of Scandinavia, and in Russia, Austria, and Germany, are forests of oak, beech, elm, and lime. Fruit trees, flowers, and various social plants, such as grass, heath, broom, and furze, abound in Central Europe. South of the parallel of 45° the vegetation is characterised by the abundance of evergreen trees, such as the arbutus, myrtle, jessamine, cypress, and evergreen oak; and by the presence of rosemary, lavender, thyme, and other aromatic plants. Many of the choice plants and flowers which adorn our gardens, in that region grow wild, such as the anemone, mignionette, narcissus, gladiolus, iris, and carnation. Here also tropical forms of vegetation appear in the oleander, date, aloe, cactus, and palmetto palms.

ANIMALS.—The animal kingdom is divided into two great divisions: vertebrata, including all animals which have a backbone; and invertebrata. The *vertebrata* are subdivided into mammals, birds, reptiles, and fishes. Of the eight orders into which mammals are divided, two are entirely wanting among the wild animals of Europe—these are *marsupials*, or pouched animals, such as the kangaroo; and the *edentata*, or toothless animals, such as the sloth, armadillo, and anteater of South America. Another order, that of *monkeys*, is represented only by a single species, the Barbary ape, which is found on the rock of Gibraltar; and the only representative of the *pachyderms*, or thick-skinned animals, found in a wild state, is the wild boar. *Carnivorous* animals are still numerous and include the bear, wolf, lynx, polecat, and fox. Among *ruminant* animals are the elk, reindeer, stag, roebuck, chamois, and ibex; and among *rodents* are the squirrel, porcupine, and hare. The *cetacea* are represented by the whale, porpoise, and seal. Birds are numerous, and in singing-birds, Europe stands pre-eminent. The reptiles are neither numerous nor formidable; but the seas and rivers abound in fish.

The **polar bear** is only found within the Arctic Circle. The brown bear, wolf, and wild boar inhabit the great forests; the wild ox and **elk** are found in Russia and Poland. The stag and roebuck in Central Europe; the **reindeer** in Scandinavia, where it is of the most essential service to the inhabitants. The **chamois** and **ibex** are found in the Alps; the **lynx** is sometimes seen in Spain, and the **porcupine** is a native of Italy. Four species of vultures inhabit the Alps, but are seldom seen in higher latitudes; further north their place is taken by eagles, falcons, and other birds of prey. The **stork**, so great a favourite in Holland, retires in winter to Africa and Asia Minor, but on the return of summer resumes its former nest. The **eider-duck**, so valued for its feathers, is exclusively confined to the northern seas. The **pelican** is met with in the east of Europe. The only venomous serpents in Europe are three species of **viper**. Three species of the tortoise are met with in the countries which border the Mediterranean; and in the sea itself a delicate species of turtle is found. Among other animals belonging to the order of reptiles may be mentioned the **chameleon**, found occasionally in Spain and Italy; and the edible frog, which is abundant in France and in other countries of Europe. The salmon is found in the rivers of Western Europe, from North Cape to the Bay of Biscay; the Dogger Bank, in the German Ocean, is the seat of a valuable cod fishery; in the Mediterranean are extensive fisheries of tunny, anchovies, and sardines; round the shores of Sardinia and Sicily there are coral fisheries; and in the Black and Caspian Seas sturgeon is plentiful.

RACES OF MEN.—The population of Europe is estimated at 290,000,000, and nine-tenths of these belong to the Caucasian type. The remainder include the Turks, the Magyars of Hungary and Transylvania; the Laplanders and Finns, who inhabit the shores of Northern Europe from the White Sea to the Atlantic; the Samoides, between the White Sea and the Ural Mountains; and the Kalmucks and other Tartar races who inhabit the south-east of Russia; all these belong to the Mongolian type.

The **Caucasian**, or European type, includes two main divisions—the Celts and the Indo-European race. The Indo-European branch is again subdivided into the Slavonic, Teutonic, and Mediterranean families. The *Celtic* races are confined to some parts of the West of Europe; the *Slavonic* races inhabit Russia, and portions of Austria, Turkey, and Greece; the *Teutonic*, Central and Northern Europe; and the *Mediterranean* group includes the people of Spain, Portugal, Italy, and Greece. Speaking generally, the Slavonic races belong to the Greek Church; the Teutonic nations are Protestants, while the Celtic and Mediterranean races are Roman Catholics. The Turks profess Mohammedanism, while many of the Finns, Lapps, and Samoides are still heathens.

THE BRITISH ISLANDS.

THE BRITISH ISLANDS form a group which lies off the north-west coast of Europe, and consists of the two principal islands of Great Britain and Ireland, together with a large number of smaller islands. The group extends over nearly 11° of latitude—from Lizard Point to the extreme north of the Shetlands—and more than 12° of longitude. The total area is about 120,000 square miles, of which Great Britain occupies about 88,000 square miles. Great Britain comprises England and Wales in the south, and Scotland in the north.

ENGLAND AND WALES.

PHYSICAL CHARACTER.

BOUNDARIES AND EXTENT.—England, under which title we also include Wales, is bounded on the north by Scotland, from which it is separated by the Cheviot Hills and the river Tweed; on the east by the German Ocean; on the south by the English Channel; and on the west by St. George's Channel and the Irish Sea. Its length, from the town of Berwick to St. Alban's Head, is 365 miles; its breadth, from St. David's Head to the Naze in Essex, is 280 miles, and its total area 58,000 square miles, of which Wales occupies about 7400 square miles.

The most northern point in England is near the town of Berwick, lat. 55° 46′; the most southern point is the Lizard, lat. 49° 58′; Lowestoft Ness, in Suffolk, the most easterly point, is in longitude 1° 46′ east; and Lands End, the most westerly point, is 5° 42′ west longitude. The distance from Dover to Cape Griz Nez, the nearest point on the coast of France, is less than 20 miles, and the distance from St. David's Head to the nearest point on the Irish coast, is about 53 miles.

COAST-LINE.—The shape of England and Wales, taken generally, is triangular, the three sides of the triangle being formed by the east, south, and west coasts respectively. The shores, however, are very broken and indented, and the total length of coast-line is about 2000 miles.

A stretch of sandy shore extends from Berwick to Bamborough Castle, which stands on a bold cliff opposite to the **Fern Islands.** From this point to Flamborough Head in Yorkshire the coast is rocky and destitute of any harbours, except those formed by the estuaries of rivers. **Flamborough Head** is composed of high cliffs of chalk which project far into the sea. It receives its name from the beacon fires which were formerly kindled upon it, and it is now crowned with a conspicuous lighthouse. On the south side is the harbour of **Bridlington Bay.** From Flamborough Head the coast runs south-east to **Spurn Point,** and consists of cliffs of clay and gravel, which offer but slight resistance to the action of the sea.

The site of Ravenspur, where Bolingbroke landed in 1399, and Edward IV. seventy years later, has now quite disappeared; and Hornsea, which was at one time six miles inland, now stands on the coast.

The coast of Lincolnshire, between the Humber and the Wash, is everywhere low, and this character continues round the Wash to the bold headland called **Hunstanton Cliff.** This cape terminates the East Anglian Heights, and consists of cliffs of chalk and sandstone rising to an elevation of 80 feet.

The **Wash** was at one time probably of much larger extent, as it is surrounded on all sides by Fens, some of which are below the level of the sea, and have to be protected by embankments. It is almost filled up by sandbanks, the summits of which appear at low water. The channels of navigation are very difficult to follow, and require experienced pilots. It is not improbable that at some future time the greater portion of it may be reclaimed and rendered fit for cultivation.

The coast of Norfolk, Suffolk, and Essex, forms a large curve which is composed in some parts of low cliffs of clay, chalk, and gravel; and in others, of long stretches of sand. Wherever the cliffs are found, the sea is gaining upon the land by wearing away the rocks; but the low sandy tracts are gaining upon the sea. The site upon which the ancient town of Cromer stood is now beneath the waves of the German Ocean. Norwich, on the other hand, was represented, five centuries ago, as standing on an arm of the sea. **Lowestoft Ness** is the most easterly point in England. Harwich, on the estuary of the Stour, has the finest harbour on the east coast. The **Naze** is the most easterly point in Essex.

The words *Naze* and *Ness* are allied in meaning, and of the same origin as our English word *nose.* The words are Scandinavian, and indicate the presence of the Danes on our coasts. Compare Caith*ness*, Buchan *ness*, Fife*ness*, Dunge*ness*, and the Naze in Norway.

The coast of Essex is much indented, and the greater part of it is lined with marshes, which in some places extend far inland. In the various creeks and channels found in the southern part, there are extensive oyster beds. The opposite coast of Kent is also for the most part low and marshy. The northern coast of the island of **Sheppey**, however, rises in cliffs from 60 to 80 ft. in height, but the southern part of the island is a low flat. Further eastward the marshes terminate, and the coast rises in clayey cliffs, which extend to Reculver. The isle of **Thanet** occupies the north-eastern corner of Kent, and contains the celebrated watering-places, Margate, Ramsgate, and Broadstairs. The island is separated from the mainland by the narrow channels of the Stour. The coast of Thanet consists of chalk cliffs, and terminates in the east at **Foreness Point**; to the south is **North Foreland.**

The channel formed by the two branches of the Stour was formerly so wide and deep, that vessels of large burthen used to take this course from the English Channel to the Thames. The bed of the river, however, became gradually choked up with sand; and, in the reign of Henry VIII., floodgates were placed where the Stour branches, the waters towards the north were distributed over the land, and for a period the channel to Reculver became quite dry. An artificial cut was afterwards made, but the channel is not used for navigation.

To the south of Ramsgate is **Pegwell Bay**, where the Saxon leaders Hengist and Horsa are said to have landed. From this point a low coast stretches to **South Foreland.** The cliffs for a considerable distance on each side of this point consist of chalk, as the North Downs here reach the sea. Off this part of the coast are the **Goodwin Sands**, and between them and the mainland is the roadstead called the **Downs.** Goodwin Sands are said to be the remains of an island which belonged to the celebrated earl, and which was submerged about the close of the eleventh century. From South Foreland the coast runs south-west to **Dungeness.** Beyond Folkestone the chalk disappears, and we reach a low flat district called *Romney Marsh.* Rounding Dungeness, and following the direction of the coast, we reach **Beachy Head**, a bold promontory of chalk cliffs which rise to a height of 564 feet. A long sweep of shore, backed by the South Downs, brings us to **Selsey Bill**, where the character of the coast changes considerably. Hitherto the shore line, on the south coast, has been for the most part unbroken and destitute of good harbours; but deep and frequent indentations now occur, and continue at intervals, until we reach Lands End. Off the coast of Hampshire lies the Isle of Wight.

The **Isle of Wight** has an area of about 150 square miles, and possesses a healthy climate and a fertile soil. A range of chalk hills crosses the island from east to west, and terminates in lofty and picturesque cliffs called the **Needles.** The river Medina, which empties itself into the Solent, divides the island into two parts. Large quantities of fine sand —used in the glass and china manufactures—are shipped from **Freshwater Bay,** on the west coast, but there are no other minerals of importance. The chief towns are Newport, Ryde, Ventnor, and Cowes. In the vicinity of Cowes is Osborne House, the residence of the Queen. The population of the island is about 60,000.

OSBORNE HOUSE.

The Isle of Wight is separated from the mainland by **Spithead** on the north-east, and the **Solent** on the north-west. Near the entrance of Spithead stands **Portsea Island,** on which Portsmouth is built. **Southampton Water** stretches upwards of 10 miles inland, and is navigable throughout for vessels of considerable burthen. The Solent has an average breadth of 2 miles, but at one part it is narrowed considerably by a long, low tongue of land, which projects from the mainland, and upon the extremity of which stands Hurst Castle. This long narrow projection acts as a breakwater, and is of considerable service. Leaving the Solent we reach **Poole Harbour**, which, at high tide, is a noble basin, but at low water is a broad expanse of mud and sand, with narrow channels running to the sea. **Purbeck Isle** is an island only in name; it terminates on the south in **St. Alban's Head.** From this point the shore runs westward to Weymouth, to the south of which is **Portland Isle.** Here a splendid breakwater, a mile and a half in length, has been built. It runs northward from the north-eastern extremity of the island, and forms a deep and sheltered harbour. Portland Isle terminates in a bold headland called **Portland Bill**, and it is connected with the mainland by a long curious ridge of low land called **Chesil Bank.**

This ridge runs from the hamlet of Chesilton, in a north-west direction, for a distance of 11 miles, and is only about 200 yards in width. It is formed by a bank of blue clay, covered with various coloured pebbles, mostly white. Its height above the sea is about 40 ft., but it slopes from the centre towards both sides.

Westward of Chesil Bank the shore consists of rocky cliffs, and this bold character continues to Lands End. The coast of Devon is deeply indented. **Tor Bay**, on which Torquay stands, is a beautiful sheet of water, bounded on both sides by rocky cliffs, between which the central shore forms the termination of a vale, which slopes gently from the interior to the water's edge. Further south is Start Bay and **Start Point.** Turning now to the north-west, we reach **Plymouth Sound**, with its various branches, each of which forms a safe and commodious harbour. The Sound is protected from the heavy swell of the Channel on the south by a gigantic breakwater, about a mile in length, which leaves at each end a good channel through which ships of the largest size may enter in any state of the tide. About 12 miles south of the breakwater is the famous **Eddystone Lighthouse.** The coast of Cornwall contains some good harbours, among which is **Falmouth Harbour**, where ships outward bound may wait for a favourable wind. **Lizard Point** is the most southerly point in Great Britain; Lands End is the western extremity of England. Between these two headlands is **Mounts Bay**, which takes its name from St. Michael's

Mount. This mount is a huge mass of granite, 231 ft. high, and about a mile in circuit, which may be reached at low water by means of a paved causeway. About 30 miles west of **Lands End** are the Scilly Islands.

The **Scilly Islands** form a group of about 150 in number, but only six are inhabited, and the largest of these is St. Mary's. Two lighthouses have been erected upon them, one on St. Agnes' Island, and the other, further westward, on Bishop's Rock. In October 1807, the English fleet from the Mediterranean, under the gallant Sir Cloudesley Shovel, ran foul of the islands, and the flag-ship and two other line-of-battle ships were lost with every soul on board. More recently, in May 1875, a German steam vessel, the *Schiller*, struck upon the islands during a dense fog, and about 350 persons perished.

From Lands End the coast runs north-east to **Hartland Point**, and is of the most bold and romantic character. Crossing **Bideford Bay**, the shore remains rocky as far as Minehead, where it becomes low and marshy. The shores on the opposite side of the **Bristol Channel** are of the same character, but as we proceed westward they become rocky and deeply indented. Passing Swansea Bay and Carmarthen Bay, which are separated by a peninsula which terminates in **Worms Head**, we reach Milford Haven, one of the finest natural harbours in the British Islands. To the north of Milford Haven is **St. Bride's Bay**, beyond which are **St. David's Head** and Strumble Head. The coast now takes a large curve, and forms Cardigan Bay. The shores are wild and rocky, and there is scarcely a single good harbour. **Bardsey Island**, which lies off the coast of Carnarvonshire, is said to have been a refuge for the last Welsh bards in the reign of Edward I. The island of Anglesey is separated from the mainland by **Menai Strait.**

Anglesey forms one of the Welsh counties; it has an area of about 300 sq. m., with a population of 51,000. The soil is not very fertile, and the climate is unfavourable to the growth of trees; but minerals, including copper, lead, limestone and marble, are very abundant. The chief towns are Holyhead and Beaumaris: the former stands on **Holy Island**, which is connected to Anglesey by two embankments.

Leaving Menai Strait, which is crossed by two magnificent bridges, we reach **Great Ormes Head.** From this point the coast curves round to St. Bees Head, but the line of curve is broken by Morecambe Bay and some smaller indentations. Turning eastward from Great Ormes Head, we reach the estuary of the Dee, which is separated by a small peninsula from the mouth of the Mersey. The coast now curves round by **Formby Point** to the mouth of the Ribble, and then running almost due north we round **Rossal Point**, and enter **Morecambe Bay**. Passing **Walney Island** we reach the Cumberland coast, which terminates westward in a bold cape called **St. Bees Head**. The shore now trends north-east, and the rugged cliffs gradually decrease in elevation as we approach the marshy tracts that surround **Solway Firth**.

The **Isle of Man**, which lies off this part of the coast, is almost equally distant from England, Ireland, and Scotland. It has an area of 220 sq. m., with a population of about 60,000. A range of hills runs through it from north to south, and culminates in *Snaefell*, which exceeds 2000 ft. in height. The soil is not very fertile, but there are valuable lead mines and slate quarries. The climate is mild. The chief towns are Castleton, Douglas, Ramsey, and Peel.

SURFACE.—The surface of England, taken as a whole, is pleasing and picturesque. The mountains are neither very high nor very rugged; there are no great expanses of bleak moorland or barren wastes; and the plains are, with few exceptions, undulating and diversified. The mountains lie chiefly in the north and west, and the principal chains have received the names of Pennine, Cumbrian, Cambrian, and Devonian ranges. The various chalk ranges in the south-east, though of no great elevation, form a striking feature in the geography of England.

The **Pennine Chain** springs off from the Cheviots, and runs southward into Staffordshire, a distance of nearly 200 miles. The average width of the chain is about 40 miles, and there are numerous offshoots on each side, especially in the counties of Northumberland, Durham, and Lancashire. The culminating point is **Cross Fell** (2927 ft.), on the borders of Cumberland and Durham. In Yorkshire the summits of **Whernside, Ingleboro'**, and **Pennygent**, exceed 2000 ft., but the highest summit in this county is **Mickle Fell**, in the extreme north-west, on the borders of Durham and Westmoreland: its height is 2585 ft. Towards either extremity of the Pennine range, the elevation declines considerably. Where it is crossed by the Newcastle and Carlisle Railway way, its height does not exceed 445 ft.; and where the Liverpool and Leeds Canal is carried across it, the elevation is not more than 500 ft. Further south, however, in Derbyshire, the chain again rises, and in the knot of mountains known as the **Peak**, attains an elevation of 1800 ft. The

moors of Staffordshire form the southern extremity of the Pennine chain.

On the eastern side of the Pennines a level tract of country extends from the Tweed to the Trent, and is known as the *York Plain*. In Northumberland and Durham, this plain extends to the sea, but in Yorkshire and Lincolnshire it is bounded on the east by the **North York Moors**, the **Yorkshire Wolds**, and the **Lincolnshire Wolds.** Parallel with the Lincolnshire Wolds, and separated from them by the valley of the Ancholme, are the **Lincolnshire Heights.** The North York Moors attain, in **Botton Head**, an elevation of 1485 ft.; but the Yorkshire Wolds, as well as the hills of Lincolnshire, have a much less elevation.

The **Cumbrian group** of mountains occupies the central and southern portions of Cumberland, a large part of Westmoreland, and a portion of Lancashire known as the Furness district. The scenery among the Cumbrian Mountains is perhaps the most romantic in England. The mountains are for the most part bold, steep, and rugged; their slopes are in general covered with a fine green sward, and they are intersected by narrow glens, many of which are occupied by beautiful lakes. **Sca Fell**, the highest summit in the group, attains an elevation of 3229 ft., and is considered the culminating peak in England. **Helvellyn**, next in height reaches 3055 ft., and **Skiddaw** 3022 ft.

The **Cambrian Mountains** occupy nearly the whole of Wales. The main axis of the system seems to run from north to south, but it is crossed by branches of greater elevation. In the north we have the range of Snowdon, which runs from north-east to south-west through the county of Carnarvon. **Snowdon** itself attains, in its highest summit, an elevation of 3590 ft. Parallel with the Snowdon range is the **Berwyn range**, which runs from Llangollen, on the river Dee, to the shores of Cardigan Bay. **Arran Fowddy** and **Cader-Idris** (2900 ft.) both belong to this chain. The district between the Snowdon and Berwyn ranges is exceedingly mountainous, but possesses beautiful and romantic valleys, such as the *Vale of Clwyd.* Further south we have the **Plynlimmon** range, which stretches to the borders of Shropshire. The whole of this range is characterised by smooth slopes and rounded summits, clothed with fine green sward, which supports numerous flocks of sheep. The district extending south of the Plynlimmon chain, as far as the river Towy, consists for the most part of barren hills and vast morasses; but the **Epynt Hills**, which form its southern border, are clothed with fine pasture. The **Radnor** and **Black Forest** ranges, which stretch south from the centre of the Plynlimmon chain on either side of the Wye, are mostly covered with verdure; and the vales of the Wye and Usk include much cultivated land. Two other main ranges —those of **Forest Fawr** and **Glamorgan**—complete the Cambrian system. The former runs through Carmarthenshire and Brecknock to Abergavenny on the Usk, the highest summit being **Brecknock Beacon** (2862 ft.). The Glamorgan Hills are steep, rugged, and sterile; but the plain stretching from their southern declivity to the Bristol Channel is, perhaps, the most fertile district in Wales.

SNOWDON.

The **Wrekin**, Clent, Lickey Hills, and Cotswold Hills, on the east bank of the Severn; and the Clee and Malvern Hills on the western side, may be looked upon as offshoots from the Cambrian system. The highest of these are the **Clee Hills**, one summit of which exceeds 1800 ft. The **Malvern Hills**, in Worcestershire, reach an elevation of 1444 ft.

The **Devonian Chain** runs through the counties of Devon and Cornwall. In the extreme north-east is *Exmoor Forest*, an extensive sheep pasture, with considerable peat swamps, but now almost destitute of trees. The highest summit, **Dunkerry Beacon**, attains an elevation of 1668 ft. *Dartmoor*, which lies to the south of Exmoor, is a plateau of larger extent and greater elevation, and is more rugged and barren in character. **Cawsand Beacon**, near its northern extremity, is 1782 ft. in height. The level tract south of Dartmoor is one of the most fertile corn districts in the kingdom. The Devonian range gradually declines in elevation from Dartmoor to Lands End, where the cliffs rise about 100 ft. above the sea. **Brown Willy**, the highest summit in Cornwall, is 1368 ft. high.

The **Quantock** and **Mendip Hills** in Somersetshire may be looked upon as belonging to the Devonian system.

The hilly district in the south-west of the island is separated from the Pennine district by the Cheshire and Central Plains. The former embraces the eastern part of Lancashire and the county of Cheshire, and in South Staffordshire meets with the *Great Central Plain*, which has an average elevation of from 200 to 400 ft. only. On the east the Central Plain is bounded by a low range of chalk hills, known in different parts as the Chiltern Hills and East Anglian Heights. In the north it merges into the York Plain, and in the north-east subsides into the *Fen district*. The Fen district, or Bedford Level, as it is now called, is one of the most remarkable tracts in the kingdom. A great portion of it is below the level of the sea, and yet there is evidence to show that the district was formerly dry land, at a much lower level than its present surface. It may be that the land has been gained from the sea, and that so long as the embankments were properly kept up, the country was fit for cultivation. Or what is more probable, the land may have gradually subsided. Evidence of such subsidence has been discovered on both sides of the Thames in the neighbourhood of London. On penetrating about six feet below the surface, the remains of an ancient forest have been discovered, with the trunks of trees for the most part standing erect. Such a subterranean forest bed has been met with at Walthamstow, Plumstead, and in Westminster. Up to the 13th century, the rivers which flow through the Fen district kept to their natural channels, and the surrounding country was either under tillage or in pasturage. Afterwards, however, the river channels seem to have become choked up, and the waters, prevented from discharging themselves into the sea, reduced the whole district to a morass. In the 17th century, Francis, Earl of Bedford, expended large sums of money in attempting to drain the district, and hence its present name. Various expedients have been tried since then, and a great part of Bedford Level has been brought under cultivation. The district embraces portions of the counties of Lincoln, Northampton, Huntingdon, Cambridge, Suffolk, and Norfolk, and embraces an area of 400,000 ac.

The Chalk Ranges.—The chalk hills nowhere attain any great elevation, the highest summit being **Inkpen Beacon**, on the borders of Berkshire (1011 ft.). Omitting the Wolds, which are separated from the other chalk ranges by the Central Plain, we shall find that all the chalk hills seem to radiate from *Salisbury Plain* in Wiltshire. On the north-east there is a range which, after being cut through by the Thames, is continued under the names of **Chiltern Hills** and **East Anglian Heights** as far as Hunstanton Cliff. On the east, the **North Downs** run through the counties of Surrey and Kent, and terminate in South Foreland. On the south-east, the **South Downs** run to Beachy Head. A fourth range turns south-west from Salisbury Plain, and is known as the **Dorset Heights**. This range, after reaching Beaminster, curves round to the east, and, continuing through Purbeck Isle, terminates in St. Alban's Head. The chalk hills in the Isle of Wight may be looked upon as a continuation of this range.

A large level tract, known as the *Eastern Plain*, stretches from the East Anglian Heights to the sea; and between the North and South Downs is the *Weald*, which, although it contains a good deal of level land, is crossed by a range of hills of considerable elevation, known as the Wealden Heights. **Leith Hill**, in the county of Surrey, belongs to this range, and attains an elevation of 967 ft.

MINERALS.—There is an intimate connection between the surface of a country and its minerals. As a general rule, a mountainous district is rich in mineral wealth. This is not so much because the mountains, by upheaving different strata of rocks, make the minerals accessible to man, as that in mountain districts the older systems of rocks are found, and these are always richer in mineral wealth than more recent systems. England is an illustration of these statements; the most important and valuable minerals are found in the north and west. The chief minerals found in England are coal, iron, lead, copper, tin, slate, and building stone.

There are fourteen chief **Coal-fields** in England and Wales:—(1) The Northumberland and Durham; (2) Cumberland; (3) Lancashire; (4) Leeds and Nottingham; (5) Leicester; (6) North Stafford; (7) South Stafford; (8) Warwick; (9) Coalbrookdale in Shropshire; (10) Dean Forest; (11) Bristol; (12) Flint and Denbigh; (13) Anglesey; (14) South Wales. The Anglesey field is very small, but that of South Wales is one of the largest. **Iron** is more or less abundant in nearly all these districts, but especially in South Wales, Durham, Yorkshire, Lancashire, and South Staffordshire. In the North Riding of Yorkshire, round about Middlesboro', great quantities of iron are produced, though the district is not a coal-field; and there is also a rich iron district in the Furness district of North Lancashire. **Lead**, with which a small quantity of **silver** is generally associated, is very abundant in the neighbourhood of Cross Fell, in the Pennine Chain; and in Yorkshire, Derbyshire, Shropshire, and Cornwall. The lead mines of Cornwall are especially rich in silver. In Wales the most productive lead mines are Cardigan, Montgomery, and Denbigh: and the metal is also worked to a considerable extent in the Isle of Man. **Copper** is chiefly obtained from Cornwall, Devon, and Anglesey. **Tin** is produced in Cornwall, and a small quantity is obtained from Devon. **Slates**, of excellent quality, come from Cumberland, North Lancashire, and various parts of Wales; the Penrhyn mines, near Bangor, are celebrated. Good **building stone** is obtained from Durham, Yorkshire, Portland in Dorset, and other places.

RIVERS.—The length and volume of rivers depend mainly upon the extent of country through which they flow; it follows from this, that, except in the centre and south of England, the courses of the streams cannot be of great length. Something also depends upon the height of the river's source above the sea-level. If the source be very high, the current will be strong, and the river will flow in almost a straight line to its outlet; if the source be at a low elevation, the current will be weak, and the river will meander about before it reaches the sea; such rivers are generally well suited for navigation. Rivers take their rise generally in springs, glaciers, or lakes; in England, and indeed throughout the British Islands, the river sources are for the most part small springs. The country drained by a river, and its various affluents, is termed a *river basin*, and the boundary line between one river and another is called a water-parting or *watershed*. Very often this water-parting is a range of hills or mountains, but this is not always the case; and it is remarkable that in England, the chalk ranges seldom, if ever, form a watershed. For convenience in description, the rivers of England may be grouped into four classes — those of the north, central, southern, and western districts.

Northern District.—Most of the rivers in this district have their sources in the Pennine Chain. Taking them in order, they are the Tyne, Wear, Tees, Ouse, and Trent on the east side, and the Eden, Lune, Ribble, and Mersey flowing to the west.

The Ouse and Trent when joined form the estuary of the Humber. The **Ouse** is formed by the junction of the Swale and Ure, which, after uniting, receive the Nidd and Wharf on the right bank, and the Derwent on the left. The Ouse next receives on the right bank the Aire, which brings with it the waters of the Calder, and the Don which passes Sheffield and Doncaster. The **Trent** rises in the moorlands of Staffordshire, and flowing southward is joined by the Tame, which rises in South Staffordshire, and flows past Tamworth. The Trent next receives the Dove, which separates the counties of Stafford and Derby, and then it is joined by the Derwent, which flows through the whole length of the latter county. Having received the Soar from Leicestershire, the Trent then turns to the north, and passing Nottingham, Newark and Gainsborough, flows into the Humber after a course of about 180 m. The **Humber**, which is from 3 to 5 m. in width, and about 40 m. in length, receives two small streams, the Hull which joins it on the left bank, and the Ancholme which flows through a valley between the Lincoln Heights and the Lincolnshire Wolds.

Basin.—The basin of the Ouse and Trent is bounded on the west by the Pennine Chain, the moors of Staffordshire, and the Clent Hills. On the south a ridge of high ground, running from the Clent Hills to the southern extremity of the Lincoln Heights, separates it from the basin of the Wash rivers. The southern portion of the Lincoln Heights belongs to the basin of the Wash, as the Witham rises to the west of the range and breaks through it. If, however, we draw a line from the Heights, just north of Lincoln, to the Wolds, near the source of the Ludd, on which Louth stands, and then south-east to the entrance of the Wash, we complete the separation of the Ouse and Trent basin from that of the Wash. The eastern boundary is now formed by the coast from the Wash almost as far north as Whitby. A line drawn from Robin Hood's Bay, along the crest of the North York moors, and continued west to the Shunnor Fell, in the Pennine Chain, indicates the line of watershed between the Ouse and the Tees. The total area of this vast basin, which includes the greater portion of the counties of York, Derby, Nottingham, Stafford, Leicester, and Lincoln, is about 10,000 square miles, or nearly one-fifth of the whole of England. The Ouse alone drains an area of 4800 square miles, and the Trent almost as much.

Central District.—The chief rivers in the central district are the Witham, Welland, Nene, and Great Ouse, which flow into the Wash; and the Yare, Waveney, Orwell, Stour, Colne, and Chelmer, which drain the Eastern Plain. All the streams are sluggish in character, as their sources have but a slight elevation.

The **Great Ouse** rises on the borders of Northampton and Oxford, and its source is only about 260 ft. above the sea. It flows therefore in a very winding course, and passes Buckingham, Bedford, and Huntingdon. Then turning eastward it is joined by the Cam, which rises in Essex, and breaks through the chalk hills known as the East Anglian Heights. The Ouse now flows almost due north, and being joined on the right bank by the Larke, Little Ouse, and Stoke, empties itself below Lynn into the Wash. Its total length is about 150 m. It appears that originally the Great Ouse, after receiving the Larke, turned to the north-west, and at Wisbeach (*Ousebeach*) joined the Nene. At this time the Little Ouse was an independent river, with the Stoke for an affluent, and had its outlet in the Wash. About the time of Edward I., however, a cut was made connecting the nearest points of the two rivers, the waters of the Great Ouse then deserted in a great measure their own channel, and took possession of the bed of the Little Ouse, thus reducing that stream to a tributary. From the point where the Ouse enters Cambridgeshire to Denver in Norfolk, two straight canals were cut in the 17th century. They absorb a portion of the waters of the Ouse, but are not used for navigation.

Basin.—The line of watershed which separates the basin of the Trent and Humber from that of the Wash rivers has already been traced. If from a point in this line, near the source of the Welland, we draw a line south-west to the source of the Nen, we mark the separation between the basins of the Wash and Severn. This line continued south to the source of the Great Ouse, and then south-east to the Chiltern Hills, will complete the western boundary of the Wash basin. The southern boundary is rather difficult to trace. At first sight, it seems to be formed by the East Anglian Heights, which terminate in Hunstanton Cliff; but all the streams which join the Great Ouse on the right bank, rise to east of the chalk range and *break through it*. The line of watershed is really a ridge of slightly rising ground which runs parallel to the East Anglian Heights, but at a considerable distance to the east of it. It would serve no good purpose to trace the separate basins of the Wash rivers, as there are no striking natural features to indicate the boundaries. It has been estimated that the Great Ouse drains an area of 3000 square miles.

Southern District.—The great river in this district is the Thames; but we may also mention the Stour, Rother, Ouse, Arun, Test, Avon, Stour, Frome, Exe, Dart, and Tamar, which flow into the English Channel; and the Torridge, Tawe, Parret, and Avon, which flow into the Bristol Channel.

The **Thames**, under the name of Isis, rises in the Cotswold Hills. Flowing to the north-east, it is joined by the Windrush, Evenlode, and other streams, and takes the name of Thames. At Oxford it receives the Cherwell on the left bank, and then turning to the south is next augmented by the Thame, which rises on the western slope of the Chiltern Hills. The river now flows through a channel which it has cut for itself through the chalk hills, and at Reading is joined by the Kennet. Turning now northward, it passes Henley and Great Marlow, and then flowing southward past Eton and Windsor, it is joined near Staines by the Colne which separates Middlesex from Buckinghamshire. Still continuing south, the Thames next receives the Wey on the right bank, and shortly afterwards it is joined by the Mole. The river now flows north-east past Kingston and Richmond, and then turning eastward flows through the metropolis. The Lea, which joins it on the left bank, separates Middlesex from Essex, and then there is no other important feeder until we reach the Medway, which flows through the middle of Kent. The mouth of the Thames is generally fixed at the Nore lighthouse, which is situated a little to the eastward of a line joining Sheerness and Shoeburyness in Essex. The total length of the Thames is 220 m., and its width at the Nore is about 6 m.

Basin.—In tracing the boundary of the basin of the Thames, we commence with a low range of hills in Essex, called the Essex Heights. A line drawn from this range in a northerly direction, between the Chelmer and Roding, brings us to the East Anglian Heights, and thus separates the basin of the Thames from the basin of the rivers which drain the eastern plain. The East Anglian Heights form, for a short distance, a portion of the northern boundary of the Thames basin; but from Kensworth Hill, near the source of the Lea, the line of watershed runs north-west to Edge Hill. The boundary now runs south-west along the crest of the Cotswolds as far as Thames head. The southern boundary of the basin runs from Thames head, in a south-east direction, to the source of the Kennet, on the Marlboro' Downs; thence past Inkpen Beacon, and along the Wealden Heights to Dover. The total area of the basin thus traced is about 6500 square miles.

The Western District.—The chief river draining this district is the Severn; and besides it we may mention the Wye, Usk, Taff, and Towy, which flow into the Bristol Channel; the Teify, Ystwith, and Dovey, which flow into Cardigan Bay, and the Conway, Clwyd, and Dee, which drain North Wales.

The **Severn** rises on the eastern slope of Plynlimmon, and flowing north-east is joined by the Vyrnwy. Then turning eastward it passes Shrewsbury. Flowing through Coalbrook Dale and passing Bridgenorth, it becomes a deep and broad river. It now enters the Vale of Worcester, and is joined on the right by the Teme, which also rises in Plynlimmon. At Tewkesbury, soon after entering Gloucestershire, it receives the Avon on the left bank. This important feeder rises at Naseby in Northamptonshire, not far from the source of the Welland, and flows south-west through a great extent of level country, passing Rugby, Warwick, Stratford, and Evesham. After receiving the Avon, the Severn flows south-west past the town of Gloucester, and then expands into a wide estuary, into which flow the Wye and Usk on the west side, and the Lower Avon on the east. The total length of the Severn is about 240 miles, but the area of its basin does not equal that of the Thames.

Basin.—The eastern boundary of the basin of the Severn has been already indicated in tracing the boundaries of the Trent, the Wash rivers, and the Thames basins. The southern boundary is formed by a line drawn from Salisbury Plain to the estuary of the Severn; and then crossing the estuary along the ridge of Forest Fawr and the Epynt Hills, until we reach the main axis of the Cambrian system. This main axis forms the western boundary, and is the watershed between the Severn and the rivers which flow into Cardigan Bay. Following the main axis as far north as Cader Idris, we meet with the Berwyn range, which, with a line running west into Staffordshire, forms the northern boundary of the basin of the Severn. The total area of the basin is about 5500 miles.

LAKES.—The lakes of England are found among the Cumbrian Mountains, in what is called the Lake District. *Tarns* or *meres* are met with in other places, but they are generally destitute of picturesque beauty. The scenery of the Lake District, on the other hand, is of the most romantic character. The lakes occupy rocky basins, which, it is supposed, have been scooped out by glacier action in ancient times. They lie in valleys which radiate at various angles from the main axis of the Cumbrian group. The chief lakes, taken in order, and commencing on the north side, are: Haweswater, Ulleswater, Thirlmere, Derwentwater, Bassenthwaite, Buttermere, Crummockwater, Ennerdale Lake, Wastwater, Coniston Lake, and Windermere.

Windermere, the largest of the lakes, lies on the borders of Westmoreland and Lancashire. It is about eleven miles long, and from one to two miles broad. **Ulleswater**, the next in size, is about eight miles long; it lies on the borders of Westmoreland and Cumberland. **Coniston**, the third, lies in that part of Lancashire called the Furness District. Many consider **Derwentwater** the gem of the English lakes. It is about three miles long, and a mile and a quarter broad. It is oval in shape, and lies among rugged mountains. The water is clear and transparent, and the surface is diversified with islands. The river Derwent, which drains this lake, is joined at Keswick by the Greta, which flows from **Thirlmere**. The Derwent then flows through **Bassenthwaite Lake**, and at Cockermouth receives the Cocker. This tributary drains **Buttermere** and **Crummockwater**. The Derwent enters the sea at Workington. **Wastwater**, the deepest of all the English lakes, lies at the foot of Sca Fell.

WINDERMERE.

The lakes of Wales are numerous but small: **Lake Bala**, the largest, at the source of the river Dee, is three and a half miles in length.

CLIMATE.—The climate of any place, as we have already stated (p. 12), depends chiefly upon its latitude; but there are several modifying causes to be taken into account, such as the nature of the surface of the country, the proximity of large masses of water, and the prevailing currents of air and water. In England all these conditions are favourable. The country is situated about the middle of the temperate zone; the surface is nowhere very elevated, the surrounding seas render the climate moist and equable, and the prevailing winds and oceanic currents tend to raise the temperature higher than that of other countries in the same latitude. The average temperature may be taken at 50° F., and the difference between the mean summer and the mean winter temperature is less than 30°. This is very small when compared with places in the interior of the Continent. At Venice the difference is 40°; at Yakutsk it exceeds 100°. On the east coast of England the annual fall of rain ranges from 20 to 30 inches: on the west coast, from 30 to 40 inches; while among the Cumberland Mountains it is considerably higher. On the other hand, the annual fall at Berlin is only about 20 inches, and the quantity decreases as we advance eastward.

VEGETATION.—Owing to the humidity and mildness of the climate, and to universal cultivation, England exhibits a constant state of verdure, and an exuberance of vegetation which is rarely met with in other countries. In ancient times the country was covered with vast forests and extensive swamps, but the swamps have been drained, and the forests in a great measure cleared. Among those still remaining may be mentioned *New Forest* in Hampshire; *Windsor Forest* in Berkshire; *Dean Forest* in Gloucestershire; and *Sherwood Forest* in the county of Nottingham. But though there is now an absence of extensive forests, England is extremely well wooded, owing to the thick hedge-rows and numerous copses and plantations which are everywhere met with. Since the middle of the last century, also, the aspect of the country has been considerably improved by the enclosure of commons and waste lands, bare and extensive moorlands having been in many instances changed into fields of grain or rich pasture.

ANIMALS.—Owing to the increase of population, and the progress of agriculture, wild animals in this country are nearly extinct. In olden times bears, wolves, boars, beavers, and wild cats, found a shelter in the forests, or on the banks of our streams, but they have long been extirpated. The fox is now perhaps the largest wild animal, and it would soon become extinct were it not preserved for the sake of sport. The only representatives of the serpent tribe in England are the common snake, the viper, and the blind worm. Of these the viper alone is poisonous. The birds which frequent this country are too well known to need particular mention. The cuckoo, which visits us in spring, spends its winter in Northern Africa and Southern Asia.

POLITICAL CHARACTER.

PEOPLE.—The original inhabitants of Great Britain were **Celts**; but the Saxons, who afterwards took possession of the country and drove the Celts into Wales, were of **Gothic** origin. Of the same origin were the Danes and Normans who subsequently settled in the country. It appears, therefore, that the English people are a Gothic or Teutonic race with an admixture of Celtic blood.

The population of England, according to the last census, was 22,712,266. The chief centres of population are London, South Lancashire, the West Riding of Yorkshire, and the neighbourhoods of Birmingham, Sheffield, and Newcastle. The least populous county is Westmoreland, where there is an average of 76 persons to a square mile; while the average for the whole of England and Wales is 389.

The European type of the human race to which the inhabitants of England belong, includes two main divisions—the Kelts or **Celts**, and the **Indo-Germans**. The Indo-Germanic division is again subdivided into European and Iranian. The European class includes the *Goths* or Teutons; the *Sarmatian* division, which embraces Russians, Poles, and the people of Servia and Illyria; and the *Mediterranean Group*, including the inhabitants of Greece and Italy, and the greater portion of those of Spain, Portugal, and France.

It has been remarked that almost all Celtic nations are Roman Catholics, while the Gothic races are for the most part Protestant: this holds true to a great extent in the British Islands. The majority of the people of Great Britain are Protestants, while the majority in Ireland adhere to the Roman Church. The Welsh are an exception to the rule: Romanism has very little hold upon them, while Protestant dissenters are very numerous. The Established Church of England is Episcopal in form, and Anglican in doctrine. It is presided over by two archbishops and twenty-six bishops; there are also about fifty bishops in our colonies and dependencies who acknowledge the authority of the Established Church. It has been estimated that out of the total population of England, about 12,000,000 are attached to the Established Church.

The *education* of the upper classes in England is provided for by the well-known public schools, such as Eton, Harrow, and Rugby, where the sons of the nobility and gentry are prepared for the universities. There are four universities in England: Oxford, Cambridge, Durham, and London. Oxford and Cambridge have a world-wide reputation. London is not a university in the usual acceptation of the term, but merely an examining body. The standard of examination, however, is high, and its degrees are therefore valued. The education of the middle classes is carried on chiefly by private schools, and the work is tested by examinations held in connection with the College of Preceptors, and the universities of Oxford and Cambridge. A great improvement in private schools has taken place during the last few years, and the operations of the Endowed Schools Commission are expected to have a beneficial effect upon middle-class education.

For the education of the lower classes there is the Government system, presided over by a Department of the State which confers certificates of competency upon properly qualified teachers, and makes grants in aid to inspected schools. The Education Act of 1870 gave a great impetus to popular education in England; and Board schools, supported by local rates, now supplement the work which has been carried on for so many years, with great zeal and success, by voluntary agency. A great impulse has also been given of recent years to technical education, by the establishment throughout the kingdom of science and art classes in connection with the department at South Kensington.

The chief industrial occupations of the people are connected with agriculture, the fisheries, mining, manufactures, and commerce.

In every part of the country agriculture, in some of its branches, is carried on to a greater or less extent; but while some counties are almost purely agricultural, in others the bulk of the population is engaged in mines or manufactures. It was pointed out, when speaking of the minerals, that they were chiefly found in the north and west; and it is precisely in those parts of the country that mining and manufactures are principally carried on. If we draw a line from the mouth of the Tees to Bridport, in Dorset, we shall find that the great agricultural counties of England lie to the east; while to the west are the great mining and manufacturing centres. Perhaps Hereford, which is a purely agricultural county, is the only exception.

AGRICULTURE.—The chief branches of agriculture are tillage or arable industry, dairy-farming, and stock-farming. The districts in which *tillage* is carried on to the greatest extent lie in the east and south-east. In the midland counties a mixed husbandry is followed; while the principal *dairy* counties—those from which we get milk, butter, and cheese—are in the west. Among these may be mentioned Cheshire, Shropshire, Gloucestershire, Wilts, Dorset, Somerset, and Devon. The western counties are better adapted to dairy-farming than to the growth of grain on account of the dampness of the climate which, while unfavourable to the growth of wheat, is well suited to pasture land. *Stock-farming* is generally associated with the other branches of agriculture; but the valley of the Tees, Cleveland in the north of Yorkshire, and Holderness in the east of that county, are especially celebrated for cattle and horses. Large numbers of sheep are reared on the chalk hills south of the

Thames, as well as in Somersetshire; and Lincoln, Leicester, and Northampton are famous for their breeds. Wales, owing to the nature of its surface, is chiefly a pastural district; and besides sheep and cattle, numerous goats and a small breed of ponies, called *merlins*, are fed upon the hills.

The principal crops raised are wheat, barley, and oats, especially the first, which is the great bread-corn of England. *Barley* is grown chiefly for malting, and oats for horses. The best *wheat* growing counties are Kent, Essex, Suffolk, Rutland, Herts, Hants, Berks, and Hereford. *Potatoes* form a very general crop, the best being raised in Lincolnshire, Lancashire, and Cheshire. Norfolk is famous for its *turnips;* though this crop is now a very general one, since it is found to succeed well after a white crop on lands that were formerly allowed to lie fallow for a season. *Hops* are confined, for the most part, to the county of Kent; to the district round Farnham, in Surrey; and to the counties of Hereford and Worcester. Thousands of the very lowest classes in the Metropolis find employment, every autumn, in the hop-gardens of Kent. Hereford, Gloucester, Somerset, and Devon are famous for the apple *orchards*, from which large quantities of cider are produced. Worcester is famous for its perry made from pears. A great improvement has taken place in all branches of agriculture during the present century, owing to a more scientific mode of cultivation, improvements in stock-breeding, and the introduction of artificial manures and agricultural instruments. Though the soil is not naturally very fertile, and the climate is very uncertain, yet it is said that the average produce of grain per acre in Great Britain exceeds that of all the countries of Europe and America; and that in rearing live stock this country stands pre-eminent. The best farmed counties in England lie on the east coast, especially Northumberland, Lincoln, and Norfolk.

FISHERIES.—The fisheries are neither so extensive nor important as might be expected from the length of coast-line, but still they give employment to many thousands of the population. The *herring* fishery is the principal, and its chief centres are Yarmouth, Lowestoft, Grimsby, and Newcastle. Fleets of fishing smacks leave these ports in the summer season for the Dogger Bank, Heligoland, and other parts of the German Ocean, and fish not only for herrings, but cod, ling, soles, turbot, and whiting. *Shrimps* and *soles* are also taken in Boston Deeps; and the coasts of Essex and Kent are famous for their *oyster* beds. At Gravesend, Ramsgate, and Margate large quantities of shrimps are also taken; and off the shore of Ramsgate there is a valuable fishery of soles and turbot. Mackerel and herring are caught at Folkestone, and thousands of *pilchards* visit the coasts of Devon and Cornwall.

Nearly 1000 fishing smacks, employed in the *herring* fishery alone, belong to Yarmouth and Gorlestone—which may be looked upon as a southern suburb—besides a number of Scotch vessels, which catch the fish off this coast and land them at Yarmouth. The local fishing vessels alone employ about 8000 men and boys. Another important branch of fishing pursued at Yarmouth is known as "trawling." This is carried on by means of a long net which touches the bottom of the sea, and the fish usually caught are *soles* and *plaice*, which are supposed to burrow in the sand. Two boats are generally used in trawling—the first merely disturbs the fish with the long net, the second captures them. Yarmouth and Gorlestone send out fleets of 400 boats for this purpose; and many of these, with the nets and other appliances, are worth £1000 each. The fish is packed up in ice and sent to London and other markets.

St. Ives, on the west coast of Cornwall, is the great centre of the *pilchard* fishery. The fish arrive in August, and continue to visit different parts of the coast until October. A portion of the fish caught are used fresh, or salted; the rest, amounting to more than 20,000 hogsheads a year, are salted and exported to Portugal, Spain, and Italy. Sometimes the quantity caught is so excessive that the pilchards are used as manure.

MINES.—The chief mines in England are those of coal, iron, lead, copper, tin, and salt. We have already mentioned the chief **coal-fields** in England and Wales: the total produce of these various districts was, in 1872, about 108,000,000 tons. By far the most productive field is that of Northumberland and Durham, which yields above one-fourth of the whole. A large portion of this coal is made into coke for the iron-works of Durham and North Yorkshire, but about 12,000,000 tons are exported to London, France, Germany, and other places. Next in importance is the Yorkshire and Nottingham coal-field, and then rank in order the South Staffordshire, the Lancashire, and the South Wales fields. **Iron** ranks next in importance to coal. The total quantity of pig-iron produced in 1871 was about 5,450,000 tons. It is found in greater or less quantities in all the coal-fields, but the chief iron districts are Cleveland, in North Yorkshire; South Wales, the county of Durham, South Staffordshire, and Lancashire.

Middlesburgh, the centre of the Cleveland iron district, stands on the south bank of the Tees about three miles from its mouth. The growth of the town, which is entirely owing to its iron-works, has been wonderfully rapid. In 1829, its site was occupied by a solitary farm-house; now it has a population of 46,000, and returns a member to Parliament. As a general rule we find, in England, the ironstone associated with the coal. This is not the case in Cleveland, but abundance of coal and coke is supplied by the county of Durham. Another iron district, distinct from a coal-field, is that round **Barrow-in-Furness**, in North Lancashire. This town has also had a rapid growth, and possesses the largest steel-works in the kingdom. The population of Barrow is 25,000. **Merthyr Tydvil**, the centre of the great coal and iron district of South Wales, lies in the valley of the Taff. The houses lie along the valley and on the hill sides, and fresh groups are continually rising in the neighbourhood of the great iron-works. The population included within the limits of the Local Board, was, according to the last census, nearly 52,000. The iron district of South Wales takes in a large portion of the counties of Glamorgan, Brecknock, and Monmouth.

Lead.—By far the greatest quantity of lead raised in England comes from the neighbourhood of Cross Fell. The mines lie principally in the upper valleys of the Tyne, Wear, and Tees; and in the neighbourhood of Alston, in Cumberland. Cornwall, Shropshire, Derbyshire, and Yorkshire have also productive mines. In Wales the most productive counties are Cardigan, Montgomery, and Denbigh; and it is also worked to a considerable extent in the Isle of Man. In most of these places, but especially in the Cornish mines, silver is found associated with the lead in considerable quantities. **Copper** is obtained from Cornwall chiefly, but it is also met with in Devon, Staffordshire, and the Isle of Anglesey. **Tin** is almost confined to Cornwall, though a small quantity is met with in Devon. The tin mines of Cornwall are the richest in Europe. **Salt** is obtained from Cheshire and Worcestershire, but chiefly from the former. The total quantity annually raised in England exceeds one million tons. Northwich is the centre of the Cheshire district; Droitwich and Stoke Prior the chief places in Worcestershire. In Cheshire the salt is obtained from mines; in Worcestershire from brine springs.

MANUFACTURES.—The chief manufactures of England are those of cotton, woollen, hardware, earthenware, silk, paper, and glass.

The **Cotton** manufacture is carried on in Lancashire, Manchester being the centre of the trade. Formerly the chief supply of raw cotton came from America, and Liverpool was convenient as a port. The numerous streams of Lancashire also supplied a good motive power before the introduction of steam, and when steam was applied to machinery, Lancashire still maintained its position as the great seat of the trade, owing to its abundant supplies of coal. The raw cotton is now supplied not only by the United States but by Hindostan, Egypt, Brazil, and other places. The total value of the raw material imported exceeds £50,000,000, while the value of the manufactured goods, including those retained for home consumption, is probably double that amount annually. The chief towns engaged in the manufacture are Manchester, Oldham, Bolton, Blackburn, and Preston, in Lancashire; Stockport, in Cheshire; and Glossop, in Derbyshire.

Manchester, on the Irwell, a feeder of the Mersey, is perhaps the first manufacturing city in the world. Within a circuit of ten miles round is embraced three-fourths of the cotton trade. The town has some good streets, and a number of fine public buildings. Besides cotton, silk goods and machinery are manufactured to a considerable extent. The population is about 360,000. **Oldham**, to the north-east of Manchester, owes its rise entirely to the cotton trade. A century ago it consisted of a few thatched tenements; now it has a population of nearly 90,000. It is surrounded with collieries, and the coal furnishes the chief supplies to Manchester, Rochdale, and other manufacturing towns. **Bolton**, or Bolton-le-moors, lies to the north-west of Manchester; Sir Richard Arkwright was at one time a poor barber in this town, and his signboard announced that he gave "a clean shave for a penny." The population is about the same as in Oldham. **Blackburn** was the birthplace of James Hargreaves, the inventor of the spinning-jenny. The population is nearly 80,000. **Preston**, at the mouth of the Ribble, has been called the handsomest of the cotton towns. The population is about 86,000.

The **Woollen** manufacture dates from a very early period in English history; but the trade was not of much importance until the reign of Edward III., who invited a number of Flemish manufacturers to settle in England. Formerly wool was exported from this country, but now we import it to the value of nearly £20,000,000 annually; and more than two-thirds of the total quantity is supplied by our own colonies, chiefly Australia and the Cape. There are two principal seats of the woollen manufacture: the West Riding of Yorkshire, and the West of England. In Yorkshire the chief towns are Leeds, Bradford, Halifax, and Huddersfield; in the West of England, Stroud, in Gloucestershire; Bradford and Trowbridge, in Wilts; and Frome, in Somerset.

Leeds stands upon the Aire, a feeder of the Ouse. The staple manufacture is woollen, but it also carries on manufactures of silk, leather, glass, and machinery. The population exceeds 290,000. **Bradford**, situated on an affluent of the Aire, is a busy thriving place, and carries on the manufacture of worsted yarns and stuffs; it has also extensive dye-works. The population is nearly 180,000. Norwich was formerly the great seat of the worsted manufacture, which is supposed to have derived its name from the parish of *Worsted*, in Norfolk; but an unlimited command of coal has given Bradford a decided advantage over Norwich. **Halifax** stands on a feeder of the Calder, and lies to the south-west of Bradford. It manufactures cotton as well as woollen goods, and has a population of nearly 70,000. **Huddersfield**, on another feeder of the Calder, is noted for its cloths and fancy goods, such as shawls and vestings. Its population is rather larger than that of Halifax. **Stroud** and its vicinity have long been famous for the manufacture of fine cloths. The streams of the neighbourhood are said to be specially suitable for fixing and brightening scarlet and blue colours. **Rochdale**, in Lancashire, is celebrated for its *flannels;* and this branch of the woollen manufacture is also carried on to some extent in Dolgelly, Welshpool, Newton, and Wrexham, in North Wales. *Carpets* are manufactured at Kidderminster, in Worcestershire; at Halifax, Dewsbury, and Durham. Dewsbury is also noted for its *shoddy mills*, where woollen rags, after being reduced to a pulp by machinery, are made into blankets, druggets, and army clothing.

Hardware.—We have already mentioned the districts where the iron is extracted from ironstone and made into *pig-iron*. This metal is afterwards manufactured into articles of every description. The chief seats of the hardware manufacture are Birmingham, Sheffield, Wolverhampton, Dudley, Walsall, and Bilston.

Birmingham stands on the borders of Warwick, Worcestershire, and Staffordshire, and is the first town in the world for the manufacture of hardware. It produces articles of all kinds from a pin to a steam engine; and is especially noted for its fire-arms, steel pens, buttons, and gold rings; it also contains a royal mint. The population exceeds 370,000. **Sheffield**, in Yorkshire, is especially noted for its *cutlery*, and for the manufacture of steel-plated goods, and files. The population is about 275,000. Wolverhampton, Dudley, Walsall, Wednesbury, and Bilston, lie in that part of Staffordshire known as the "Black Country," and are surrounded by coal and iron mines, furnaces, iron and brass founderies, rolling mills, and other similar works. **Dudley**, however, belongs to the county of Worcester; it has a population of 44,000. **Wolverhampton** has long been famous for its locks and keys; but its staple business now, perhaps, is japanned ware; it has a population of nearly 73,000. **Walsall**, a town about the same size as Dudley, is famous for its bits, spurs, stirrups, and other articles used in the business of saddlers and coachmakers. **Wednesbury** has large works for the manufacture of railway carriages, muskets, fire-grates, nails, and hinges. **Bilston** is famous for its japanned and enamelled ware, steam engines, machinery, iron gates, and iron-wire. Both towns have a population of about 26,000.

Earthenware.—The chief seat of this manufacture is the North Staffordshire coal-field, the district being called the "Potteries." The neighbourhood produces abundance of clay, used in the manufacture, but the finest qualities are brought from Cornwall, Devon, and Purbeck Island. Flint, which is also necessary in the manufacture of porcelain, is obtained from Kent, Wales, and Ireland. Besides earthenware and china, encaustic tiles, parian statuary, and majolica ware are produced. The chief towns engaged in the manufacture are Stoke, Hanley, Burslem, and Longton.

Hanley, the largest of these towns, has a population of about 40,000. **Burslem**, next in importance, has a population of about 25,000. The present position of British earthenware is mainly owing to the skill and enterprise of Mr. Wedgewood in the last century, who not only improved the composition, glaze, and colours of the old wares, but invented several new ones. He founded the village of Etruria, where his works were situated, and his descendants yet reside there. Besides the places already mentioned, the towns of Worcester and Derby have long been celebrated for their porcelain.

Silk.—The chief seats of the silk manufacture are Spitalfields, in London; Macclesfield, Manchester, Coventry, and Derby. In Spitalfields and Manchester broad silks and handkerchiefs are woven; Coventry is celebrated for its ribbons. We import silk both in a raw and manufactured state from France, Italy, China, and the East Indies.

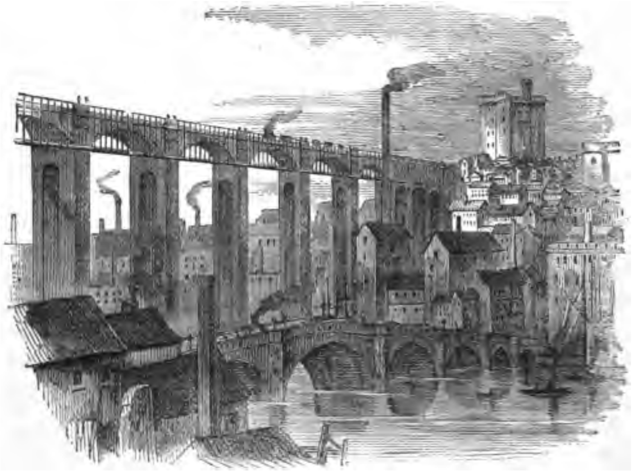
The seat of the silk manufacture at Spitalfields, in London, was established by French refugees in the reign of James II. Many of their descendants, to the number of some thousands, still carry on the manufacture; but its importance is not so great as formerly.

Glass.—The manufacture of glass has made considerable progress in this country during the present century. Its chief seats are in the neighbourhoods of Newcastle, Liverpool, and Bristol. Newcastle, South Shields, and Sunderland, are celebrated for the manufacture of glass bottles; St. Helen's, in Lancashire, for plate glass. Glass is also manufactured at Birmingham, Dudley, Stourport, and other places.

Besides the manufactures already mentioned, there are other branches of industry which employ large numbers of the population in various parts. The *building of ships*, both of timber and iron, is carried on at most of our ports, but especially in London, Liverpool, Sunderland, Plymouth, and Portsmouth. The manufacture of steam engines and *railway plant* is an important branch of industry at Newcastle, Darlington, Doncaster, Swindon (Wilts), Ashford (Kent), and in other places. Malting, brewing, and distilling are important branches of trade in London, Burton-on-Trent, and elsewhere. *Shoes* are manufactured to a large extent in the counties of Leicester, Northampton, and Stafford; *stockings* at Leicester, Derby, and Nottingham; and leather *gloves* at Worcester, Yeovil (Somerset), and Woodstock (Oxford). Paper is manufactured in many of the counties. Besides these, there are certain employments in the Midland Counties that should not be omitted. The counties of Bedford, Herts, and Buckingham, form the principal seat of the **straw-plait** manufacture; Buckingham and Bedford are noted for hand-made **lace**; while the former county also carries on a considerable trade in the manufacture of chairs, and other articles of wooden-ware.

Dunstable and **Luton**, in the southern part of Bedfordshire, have a world-wide reputation for straw-plait. Buckinghamshire was formerly a chief seat of the lace manufacture, but the introduction of machinery has caused its decline. Machine-made lace is the staple business of Nottinghamshire. In the beginning of the present century, Honiton, in Devon, was famous for its lace, but very little is now made there; Tiverton, in the same county, has, however, a large lace factory.

INTERNAL COMMUNICATION.—The prosperity of a country depends, to a very large extent, upon easy means of transit from one part to another; and internal trade can scarcely exist where these means are wanting. No country can boast of better internal communication than England. Most of her rivers are more or less navigable, and this navigation is supplemented by above 2000 miles of canals, which are especially numerous in the manufacturing districts. The turnpike roads of England are considered the best in the world; but these have, for purposes of internal traffic, been in a great measure superseded by the railway system. The first public railway—the Stockton and Darlington line—was opened as recently as 1825, and now the length of lines in England amounts to 12,000 miles.



HIGH LEVEL BRIDGE, NEWCASTLE.

Nine principal lines of railway radiate from London, and each of these has a number of branches and extensions; so that the whole country is covered by a perfect network of lines. The great railway systems are: (1) the **Great Northern**, which starts from King's Cross and proceeds through Peterborough, Retford, and Doncaster to York: it is continued to Berwick by the **North-Eastern**, which crosses the Tyne, at Newcastle, by the High Level Bridge; (2) the **Midland**, which starts from St. Pancras, and runs through Bedford, Derby, and Leeds, to North Lancashire; (3) the **London and North-Western**, which starts from Euston Square, and proceeds through Rugby, Crewe, and Penrith, to Carlisle; (4) the **Great Western**, which starts from Paddington and proceeds through Slough, Reading, Didcot, and Swindon, to Bristol; (5) the **London and South-Western**, from Waterloo Bridge through Clapham Junction and Basingstoke, to Southampton; (6) the **London, Brighton, and South Coast**, from London Bridge, Victoria, and Kensington, through Clapham Junction, the Crystal Palace, and Hayward's Heath, to the South Coast; (7) the **South-Eastern**, from Charing Cross, Waterloo, Cannon Street, and London Bridge, through New Cross and Red Hill, to Ramsgate and Dover; (8) the **London, Chatham, and Dover**, from Victoria, through Chatham, Faversham, and Canterbury; and (9) the **Great Eastern**, from Bishopsgate Station to Yarmouth, through Essex and Suffolk.

Scarcely less important than railways are the cheap postage and the telegraph system. Rapid and regular communication is of the utmost importance to men of business, and the extraordinary development of the cheap postal system must have had an immense effect upon trade generally. The telegraph system is only a more rapid system of postage, and a few years ago (1869) the whole telegraphic system of Great Britain and Ireland was handed over to the postal authorities. There are now about 5000 offices in different parts of the kingdom, and the number of messages sent in 1873, exclusive of newspaper work, amounted to upwards of 17,000,000.

COMMERCE.—The foreign trade of England is more extensive than that of any other country in the world. The value of our exports in 1874 was estimated, in round numbers, at £295,000,000, and the imports at £368,000,000. The excess in the value of the imports represents the profit on the exports, the charge for freight, and the interest on British capital invested abroad. Our chief exports may be grouped under three heads: (1) natural products, including the produce of mines and fisheries; (2) manufactured goods, especially cotton, woollen, and iron goods; (3) colonial produce re-exported. The imports may also be classed under three heads: (1) raw materials for our manufactures, such as raw cotton, wool, silk, flax, hemp, hides, and timber; (2) articles of food, as corn and flour, sugar, tea, coffee, and rice; (3) articles of luxury, as wines, tobacco, and spirits.

The colonial produce re-exported includes coffee, rice, indigo, and other articles. The countries to which they are sent are France, Holland, Germany, Russia, and Prussia chiefly. We import *corn* and *flour* to the value of about £50,000,000 annually; the countries from which our supplies chiefly come are the United States, Russia, Prussia, British North America, France, Turkey, and Egypt. *Timber* of the ordinary kind, chiefly pine and fir, we get from the countries round the Baltic and from British North America; logwood and mahogany from the West Indies; rosewood, satinwood, ebony and other ornamental woods from the East Indies and Western Africa; teak from India and Western Africa; and boxwood from Turkey and other countries in the Mediterranean.

Our colonies and possessions abroad besides supplying us with much of the raw material for our manufactures, take nearly one-fourth of our total exports. Among foreign countries our best customer is the United States of America, next rank in order Germany, France, Holland, Belgium, Russia, Italy, Turkey, Brazil, Egypt, and China.

The quantity of shipping by which so large a trade is carried on is, of course, very great. The tonnage of the various British and foreign vessels which entered our ports in 1873 amounted to nearly 19,000,000 tons; and the amount of those which cleared our ports in the same year was nearly 38,000,000 tons.

The chief ports in which the foreign trade of England is carried on are London, Liverpool, Hull, Bristol, Newcastle, Plymouth, Southampton, Sunderland, Whitehaven, Hartlepool, Stockton, Yarmouth, Gloucester, Swansea, and Cardiff.

London stands about forty-five miles from the mouth of the Thames which, at Westminster, is about 1000 yards broad. It includes—besides the cities of London and Westminster—the Parliamentary boroughs of Tower Hamlets, Hackney, Finsbury, Marylebone, Chelsea, Lambeth, and Southwark: Lambeth and Southwark lie on the south side of the Thames, in Surrey; the rest of the metropolis is in Middlesex. The total population is 3,500,000. Below London Bridge the channel of the Thames forms a kind of horse-shoe round a peninsula, the neck of which is pierced through by the West India Docks. This peninsula is called the *Isle of Dogs*. The port of London extends from London Bridge to the Isle of Dogs, and is always crowded with shipping, especially collier vessels. The quantity of coals brought to London by sea exceeds 3,000,000 tons annually. As repects foreign trade, London is surpassed by Liverpool; but taking the home trade and foreign trade together, London is, no doubt, the first port in the world. It trades with almost every region of the globe, but more especially with India, China, and Australia.

Liverpool is the great centre of the foreign trade of England. It trades chiefly with the United States, West Indies, South America, and Ireland. As it is the great outlet for the counties of Lancashire, Cheshire, Stafford, and Warwick, it exports textile fabrics, salt, iron, hardware, and earthenware. Its chief imports are cotton, hides, timber, and agricultural produce. It is also an important packet station, and a great port for emigration. The population is above 500,000. *Birkenhead*, on the opposite side of the Mersey, is a thriving place with magnificent docks, where shipbuilding is extensively carried on.

Hull trades with the Baltic, Mediterranean, and South America. It is the outlet for the counties drained by the Ouse and Trent, and the chief exports are woollen and cotton goods, earthenware, and hardware. The principal imports are corn, timber, iron, wool, tallow, hides, and fruits. Hull is also the chief port in Great Britain for the northern whale fishery. The population is about 135,000.

Bristol, which stands about ten miles from the mouth of the Lower Avon, has some important manufactures, including those of machinery, leather, sugar and treacle, paper, glass, pottery, soap, and tobacco. It trades chiefly with Ireland, but has also a considerable import trade with America, the Mediterranean, and the Baltic. It is said that at least one half of the vessels which bring goods into its docks carry none out. The chief imports are corn and flour, wine and spirits, timber, sugar, tobacco, fruits, hides and tallow, oils, and dye-woods. The oils are mostly palm oil, olive oil, paraffin oil, and train oil. The population is about 200,000.

Newcastle stands about ten miles from the mouth of the Tyne, but the river is navigable for the largest vessels. The principal manufactures are those of iron, glass, lead, and chemical products; and there are large smelting furnaces, iron founderies, and steam-engine works in the neighbourhood; shipbuilding is also extensively carried on. The chief export is coal, which is sent to London, France, the Baltic, and the Mediterranean. The population is about 140,000, but if we include *Gateshead*, which is really a suburb, it amounts to 190,000. At the mouth of the Tyne stand *North Shields* and *South Shields*, populous towns, where shipbuilding is extensively carried on; and, in fact, both banks of the Tyne, from Newcastle to the sea, are almost covered with works and workshops.

ENTRANCE TO THE TYNE.

Plymouth, which includes also the towns of *Devonport* and *Stonehouse*, is chiefly famous as a naval station, ranking second only to Portsmouth. It has, however, considerable coasting and foreign trade. Its chief exports are agricultural produce, copper ore, china clay, fish, and granite. The copper ore is sent to Swansea to be smelted; the china clay to the potteries. The population of Plymouth proper is nearly 70,000; and Devonport and Stonehouse together have a population of 50,000.

Southampton is the most important packet station in the kingdom, and passengers embark here for France, the Mediterranean, the West Indies, and North and South America. The Peninsula and Oriental Steam Navigation Company, and the Royal West India Mail-Packet Company, run the whole of their vessels from this port. Southampton has also considerable trade, and imports agricultural produce, wine, brandy, and timber. The population is about 54,000.

Sunderland, at the mouth of the Wear is, next to Newcastle, the great coal-exporting place in England. It contains manufactures of glass, earthenware, ropes, chains, anchors, and other iron goods; and shipbuilding is carried on to a great extent. The borough includes the districts of *Monkwearmouth* and *Southwick*, on the north side of the river; and *Bishopwearmouth* on the south. The total population is nearly 110,000.

Whitehaven has considerable trade with Ireland, to which it sends coal, iron, lime, freestone, and gypsum. It has also some trade with North America, the West Indies, and the Baltic. Steam-packets ply regularly to Liverpool, the Isle of Man, and Dumfries. It manufactures sailcloth, linen, anchors, and cables; and there are ship-yards, roperies, founderies, brick and tile works, and potteries. The population is nearly 20,000.

Hartlepool is an ancient port which has made rapid progress during the last fifty years, owing to the discovery of coal in its neighbourhood, and to the enlargement of its docks. It is also an important fishing station. The population is about 13,000. *West Hartlepool*, which is of recent growth, carries on an important trade in timber, coal, and iron. It has a population of more than 20,000, and with old Hartlepool forms a Parliamentary borough.

Stockton, at the mouth of the Tees, is a thriving port. It trades with the eastern ports of England, and with Holland, Hamburg, and the Baltic. It has also some manufactures of linen and sailcloth. It has a population of about 28,000.

Yarmouth, on the estuary of the Yare, is chiefly noted as a fishing port, but it is also much frequented as a bathing place, and has considerable trade. Its quay is one of the finest in England. It exports considerable quantities of agricultural produce, especially barley; and imports large quantities of timber from the Baltic. The population is about 42,000.

Gloucester, near the mouth of the Severn, trades principally with the other English ports and with the Baltic. It exports salt, coal, iron, malt, bricks, and pottery. Its chief imports are timber, wine, spirits, and corn and flour. Much of the barley imported is sent to the Burton breweries. The population exceeds 18,000.

Swansea, a prosperous and rising town, owes its importance to its being the outlet for the great coal-field of South Wales. It has an extensive trade in the shipping of coal, and has large potteries. Works for the smelting of copper and other metals are established in the neighbourhood, and copper ore is brought not only from Cornwall and Ireland, but also from Cuba and Chili. The population exceeds 50,000.

Cardiff, on the Taff, about a mile above its embouchure in the estuary of the Severn, is another outlet for the great South Wales coal-field, and especially for the iron-works of Merthyr and Aberdare. Large docks have been constructed, and immense quantities of coal and iron are exported annually. The population is about 40,000.

COUNTIES AND TOWNS.—England is divided into forty counties: Wales into twelve. The following is a list of the counties with the chief towns, the county town in all cases coming first:—

NORTHERN COUNTIES.

NORTHUMBERLAND—Newcastle, Morpeth, Alnwick, Hexham.

DURHAM—Durham, Sunderland, Hartlepool, Stockton, Darlington.

YORK—York, Leeds, Bradford, Halifax, Huddersfield, Sheffield, Doncaster, Hull, Scarborough, Whitby, Middlesborough.

CUMBERLAND—Carlisle, Whitehaven, Penrith, Keswick.

WESTMORELAND—Appleby, Kendal.

LANCASHIRE—Lancaster, Liverpool, Manchester, Bolton, Preston, Blackburn, Bury, Rochdale, Oldham.

Northumberland is, upon the whole, an agricultural county; in the south, however, along the banks of the Tyne, are numerous collieries and important iron-works; and, in the south-west, valuable lead mines. In the western part of **Durham** lead mining is carried on; in the centre are coal mines and iron-works, while agriculture is the chief occupation in the south-east. **Yorkshire** is divided into three parts called *ridings*—a word which is supposed to be a corruption of *trithing*, a third part. In the North Riding there are extensive iron-works in the east, and valuable lead mines among the vales of the west. The West Riding is the great seat of the woollen manufactures of England; while the East Riding is a rich agricultural district. The central and southern portions of **Cumberland** are included in the Lake district, and here are valuable mines of plumbago, or black lead. Lead mines are found in the east, and coal in the west, while the north is devoted to agriculture. **Westmoreland** means *west moor land;* the greater part of the country is hilly. The mines and manufactures are not of much importance, Kendal, however, has long been noted for its woollen cloths. The *Furness district* of **Lancashire** forms a part of the Lake district, and on the coast, in the neighbourhood of Barrow, are valuable deposits of iron. The south part of Lancashire is the seat of the cotton manufacture; there are also valuable coal mines and large iron-works.

KESWICK.

Northumberland derives its name from the Saxon kingdom of *Northumbria*, which extended from the Humber to the Forth. Cumberland is derived from *Cumbria*, the name of a British kingdom which at one time extended from the Clyde to the Mersey. *Flodden*, in the northern part of Northumberland, is famous for the battle, fought in 1513, when James IV. of Scotland was slain with the flower of his army. *Alnwick* possesses a fine old castle often mentioned in Border history; here William the Lion was taken prisoner (1174). A battle was fought at *Hexham* in 1464. Near Durham was fought the battle of *Neville's Cross*, when David Bruce was defeated and taken prisoner (1347). The *Stockton* and *Darlington* railway, the first in the kingdom, was opened in 1825; the fiftieth anniversary was celebrated recently with great rejoicing. There are several battle-fields in Yorkshire: *Stamford-bridge*, on the Derwent, where

Harold defeated the King of Norway (1066); the battle of the *Standard*, near Northallerton (1138); *Wakefield* (1460), and *Towton* (1461), fought during the War of the Roses; and *Marston Moor*, won by Cromwell (1644). *York* is an interesting old town with a noble minster. *Scarborough* is a fashionable watering-place; *Whitby* is noted for its alum and jet; *Keswick*, in Cumberland, is sometimes called the "Queen of the Lake district." The chief towns of Lancashire are engaged in manufactures, and have been already noticed.

EASTERN COUNTIES.

LINCOLN—Lincoln, Boston, Louth, Gainsborough.
CAMBRIDGE—Cambridge, Ely, Wisbeach, Newmarket.
NORFOLK—Norwich, Yarmouth, Lynn Regis, Cromer.
SUFFOLK—Ipswich, Bury St. Edmunds, Lowestoft.
ESSEX—Chelmsford, Colchester, Harwich, Southend.

The surface of **Lincoln**, and indeed of all the eastern counties, is upon the whole very flat; it is a rich agricultural county. A great portion of **Cambridge** belongs to the Fen district; it is one of the chief corn-growing counties of England. **Norfolk** is also famous for its agricultural industry. Tillage is carried on in the north and north-east, while the grazing lands are chiefly in the west and south-west, adjacent to the marshes of the Bedford Level. The soil of **Essex** is well adapted to the growth of corn, and, in the marsh lands of the south and east, numerous cattle are kept. The cultivation of caraway, coriander, and teasel, is peculiar to this county. Caraway and coriander seeds are used in confectionery. The dried cones of the teasel are used for raising the nap in woollen cloths.

SANDRINGHAM.

Lincoln is famous for its cathedral; in the tower hangs the "Great Tom of Lincoln," a bell which weighs 5 tons 8 cwt. *Cambridge* is celebrated for its university; *Ely* for its ancient cathedral, which has recently been restored; *Newmarket* for its races—part of the town is in Suffolk.

Yarmouth, *Cromer*, and *Lowestoft*, are much frequented for sea-bathing. *Lynn Regis*, or King's Lynn, was formerly called Bishop's Lynn, but Henry VIII. conferred upon it its present name. It was in going from Lynn to Lincolnshire that King John lost his treasure, baggage, and regalia. A few miles to the north-east of Lynn is *Sandringham Hall*, the residence of the Prince of Wales. *Ipswich* was the birthplace of Cardinal Wolsey. *Bury St. Edmunds*, or the city of St. Edmund, was so named because the body of Edmund, king of East Anglia, who was slain by the Danes (871), was buried there. The remains of the king and martyr were first interred at Hoxne, in the same county, but in 903 they were transferred to Bury, and a splendid monastery was erected over the tomb. *Colchester*, an ancient place, is celebrated for its Roman remains. It is an important military station. *Southend* is a pleasant bathing-place; in the neighbourhood is *Shoeburyness*.

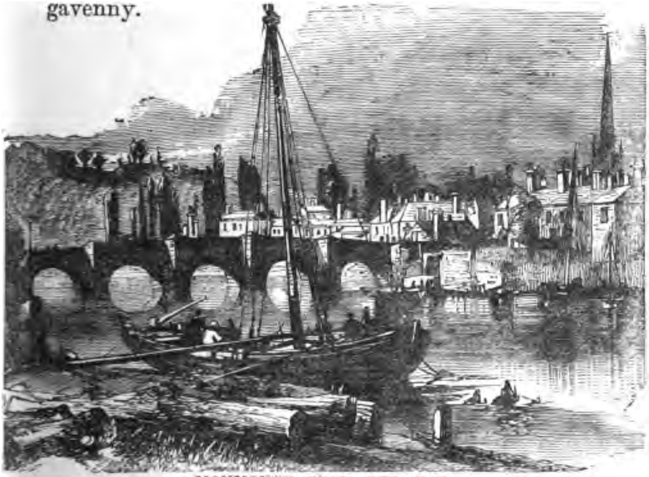
WESTERN COUNTIES.

CHESHIRE—Chester, Stockport, Macclesfield, Birkenhead, Northwich.

SHROPSHIRE—Shrewsbury, Ludlow, Bridgenorth.

HEREFORDSHIRE—Hereford, Leominster, Ross.

MONMOUTHSHIRE—Monmouth, Newport, Chepstow, Abergavenny.



MONMOUTH FROM THE WYE.

Cheshire is, upon the whole, a flat country, and its soil and climate are well adapted for pasturage. In the middle of the county, along the valley of the Weaver, are valuable deposits of salt, in the centre of which stands *Northwich*. Manufactures are carried on in the east and north. **Shropshire** is probably a contraction of Shrewsburyshire; it is sometimes called **Salop**. The county is divided into two parts by the river Severn; on the north and east the county is for the most part a level plain, out of which rises the isolated summit of the Wrekin; in the south, are spurs from the Welsh mountains. The county is noted for its dairy produce. To the south-east of the Wrekin, and extending almost as far as Bridgenorth, is *Coalbrookdale* with its extensive iron-works. The surface of **Herefordshire** may be characterised as hilly; it is almost purely an agricultural county. **Monmouthshire** is divided into two parts by the river Usk; to the west of that river the country is rugged and mountainous; to the east level and well wooded. There are extensive iron-works in the north and west.

Chester is a quaint old town, surrounded with walls of great antiquity. It was, previous to the Conquest, a place of considerable importance as a commercial port, but the gradual filling up of the channel of the Dee, together with the rise of Liverpool, proved fatal to its trade. Hotspur was slain at the battle of *Shrewsbury* (1403). Near Leominster was fought the battle of *Mortimer's Cross* (1461). *Monmouth* was once famous for its woollen caps, and it was enacted in the time of Queen Elizabeth that these caps should be universally worn on Sundays and holy days. They are referred to by Shakespeare (Henry V., v. 7).

MIDLAND COUNTIES.

DERBY—Derby, Matlock, Chesterfield, Buxton.

NOTTINGHAM—Nottingham, Newark, Mansfield.

STAFFORD — Stafford, Lichfield, Wolverhampton, Stoke, Burton, Walsall, Wednesbury, Bilston.

LEICESTER—Leicester, Loughborough, Melton Mowbray Lutterworth.

RUTLAND—Oakham, Uppingham.

WARWICK—Warwick, Birmingham, Coventry, Rugby Leamington, Stratford-on-Avon.

WORCESTER—Worcester, Kidderminster, Dudley, Evesham.

NORTHAMPTON — Northampton, Peterborough, Wellingborough, Kettering.

HUNTINGDON—Huntingdon, St. Ives, St. Neots, Stilton.

GLOUCESTER—Gloucester, Bristol, Cheltenham, Tewkesbury, Stroud, Cirencester.

OXFORD—Oxford, Banbury, Henley, Woodstock, Witney.

BUCKINGHAM—Aylesbury, Buckingham, Great Marlow, Eton, Olney.

BEDFORD—Bedford, Dunstable, Luton, Leighton Buzzard.

HERTFORD—Hertford, St. Albans, Ware, Barnet.

MIDDLESEX—London, Brentford, Uxbridge, Staines, Harrow.

Derbyshire is hilly in the north, where there are numerous limestone caverns; in the south and south-east the country is level. The county is rich in coal, lead, and other minerals. **Nottingham** is diversified with hill and dale. Formerly *Sherwood Forest*, renowned in the annals of Robin Hood, extended from Worksop to Nottingham, but a great portion of it is now enclosed and broken up into farms and parks. Hosiery and lace are the staple trades of the county. **Staffordshire** is hilly in the north, but level or undulating in the south. The southern part, which is covered with mines, factories, and furnaces, has been called the "Black Country;" in the north is the district called the "Potteries." The surface of **Leicester** may be described as undulating. The leading manufactures are hosiery and the making of boots and shoes. **Rutland**, the smallest of English counties, is well adapted to agriculture. **Worcestershire** is a beautiful and well watered county; in the west are the Bredon and Malvern Hills, and in the east the fertile vales of Worcester and Evesham. **Warwickshire** forms a portion of the great central plain of England. In the northern part of the county are important manufactures; in the south and more fertile portion, agriculture is carried on. **Northamptonshire** is beautifully diversified with gently rising hills, fine valleys, and extensive woods. The extreme north of the county is included in the Bedford Level.

STRATFORD-ON-AVON.

The making of boots and shoes is carried on to a great extent. **Huntingdon** is level, and particularly so in the north and north-east, where it forms part of the Fen district; it is an agricultural county. The surface of **Gloucestershire** may be divided into three parts: the hilly district occupied by the Cotswolds; the Valley of the Severn, and the Forest of Dean on the west. It is chiefly an agricultural county, but there are mines in Dean Forest, and manufactures at Stroud, and other places. **Oxfordshire** is upon the whole a level county, except in the south-east where there are spurs from the Chilterns; the chief industry is agriculture. The southern part of **Buckinghamshire** is hilly; the central and northern parts level or undulating. Agriculture is the chief industry, but large numbers of people are employed in the manufacture of thread-lace, straw-plait, and wooden ware, such as chairs. **Bedfordshire**, upon the whole, is a flat county, except in the south-east, where it is crossed by the Chilterns.

The industry is the same as in Buckinghamshire—agriculture, straw-plait, and thread-lace. The surface of **Hertfordshire** is diversified with hill and dale. Agriculture is the chief employment of the people, but straw-plait employs large numbers. The surface of **Middlesex** is undulating, none of the hills rising much more than 400 feet above the sea. The greater portion of the county, outside the metropolis, is laid out in meadows, parks, or pastures; and, in the vicinity of London, in gardens and nursery grounds.

Matlock and *Buxton* are noted for their mineral springs. At *Stoke*, near Newark, Lambert Simnel was defeated (1487). *Lichfield*, an old place, is a cathedral town. *Burton-on-Trent* is famous for its ale. About twelve miles west of Leicester is *Bosworth Field*, where the last battle in the War of the Roses was fought (1485). *Lutterworth* was the scene of Wycliffe's labours; he died here (1384). Charles II. was defeated at *Worcester* (1651). At *Evesham*, Simon de Montfort was defeated and slain (1265). *Rugby* is famous for its public school. *Leamington* is a fashionable watering-place. *Stratford-on-Avon* was the birthplace of Shakespeare (1564). The battle of *Northampton* took place in 1460. *Peterborough* is a cathedral town. *Fotheringay Castle*, on the Nene, in the northern part of the county, is the place where Mary Queen of Scots was executed (1587). *Naseby*, in the western part of the county, near the source of the Avon, was the scene of King Charles' final defeat (1645). *Huntingdon* was the birthplace of Oliver Cromwell (1599). *Stilton* gives its name to the celebrated cheese which was originally made in Leicester, but was first sold here at the Bell Inn. Stilton cheeses continue to be made in Leicestershire chiefly. *Gloucester* is celebrated for its grand old cathedral; there is also a cathedral at *Bristol*. *Cheltenham* is a fashionable watering-place. The battle of *Tewkesbury* was fought (1471). At *Cirencester* (pron. *Ciceter*) there is a royal agricultural college. *Oxford* is famous for its university. *Banbury* "Cross" was destroyed in the time of Queen Elizabeth; the town is still famous for cakes. *Henley* is famous for its annual regatta. *Woodstock* is connected with the story of Henry II. and Fair Rosamond. *Eton* is famous for its public school. *Olney* was for a long time the residence of the poet Cowper. *Bedford* gaol is associated with the life of Bunyan; about a mile south of the town is *Elstow*, the place where he was born (1628). *Dunstable*, *Luton*, and *Leighton Buzzard*, are chief centres of straw-plait making. *St. Albans* stands upon the Ver, a feeder of the Colne; the ancient name of the town was *Verulam*. Here St. Albanus was martyred (303). Two battles were fought here during the War of the Roses. *Barnet*, frequently called Chipping Barnet, lies on the borders of Middlesex; the battle of Barnet (1471) was fought a little to the north of the town and within the county of Middlesex. *Brentford* is the old county town of Middlesex, and here the county elections are still held. *Harrow* is famous for its public school. The town stands on a hill about 400 feet above the sea, and the view from the summit is said to take in thirteen counties.

SOUTHERN COUNTIES.

KENT—Maidstone, Canterbury, Greenwich, Chatham, Dover, Gravesend, Woolwich, Tunbridge Wells.

SUSSEX—Lewes, Brighton, Chichester, Hastings, Shoreham.

HAMPSHIRE—Winchester, Portsmouth, Southampton, Christchurch.

DORSET—Dorchester, Weymouth, Poole, Bridport.
DEVON—Exeter, Plymouth, Tiverton, Barnstaple, Torquay.
CORNWALL—Bodmin, Truro, Penzance, Falmouth, Launceston.
SOMERSET—Bath, Wells, Taunton, Bridgewater, Frome.
WILTSHIRE—Salisbury, Swindon, Trowbridge, Devizes, Marlborough.
BERKSHIRE—Reading, Windsor, Abingdon, Wallingford, Newbury.
SURREY—Guildford, Croydon, Richmond, Kingston, Epsom.

The surface of **Kent** is undulating, and it is a beautiful and well-wooded county. It is celebrated for its orchards and hop-gardens. **Sussex** resembles Kent in its soil and surface; it is celebrated for a breed of sheep known as the "South Downs." **Hampshire** is one of the most agreeable counties in England; the surface being varied with hill and dale, and the climate mild and genial. The south-western district, lying between Southampton Water and Dorset, is principally occupied by the *New Forest* and by extensive heaths. The surface of **Dorset** is beautifully diversified, and in some places the scenery is even grand. Dairy-farming and the breeding of sheep are carried on to a great extent. **Devon** is hilly, and its scenery is often very picturesque. Like Dorset it is chiefly a grazing and dairy county. **Cornwall** has, upon the whole, a bleak and dreary aspect, though there are numerous valleys of great beauty and fertility. Its wealth is chiefly derived from its mines of tin and copper. **Somerset** has a great variety of surface, including moors, mountains, and marsh-land. The *Vale of Taunton* is one of the most beautiful tracts in the kingdom. A large portion of the county is in grass, and Somerset produces the celebrated Chedder cheese. The northern half of **Wiltshire** is chiefly devoted to dairy-farming and the fattening of cattle; the southern half, which includes *Salisbury Plain*, has been described as an immense sheep farm. The surface of the whole county may be described as undulating. **Berkshire** is a beautiful county, being diversified with hill and dale, and well timbered. There are extensive heaths in some parts. Agriculture forms the chief employment of the people. The surface of **Surrey** is undulating, and in many parts beautifully diversified with hill and dale. The soil is of average fertility, but there are extensive heaths in the north-west and south-west. In the neighbourhood of the metropolis market-gardens are numerous; the rest of the county is chiefly devoted to agriculture.

Maidstone, on the Medway, is the centre of the hop trade. *Canterbury* is celebrated for its cathedral; here Thomas à Becket was slain (1170). *Rochester*, near Chatham, is also a cathedral city. *Greenwich* is celebrated for its Royal Hospital and Royal Observatory. *Woolwich*, about three miles to the east, derives importance from its dockyard, arsenal, and other naval and military establishments. *Chatham*, at the mouth of the Medway, has a large dockyard, an extensive arsenal, an artillery park, and barracks for artillery, engineers, and marines. *Dover* is an important packet station. It is also the seat of government for the Cinque ports. These were originally five in number: Dover, Sandwich, Romney, Hythe, and Hastings; and they were endowed with special privileges by the sovereigns of England, on condition that they provided a certain number of men and ships for the protection of the coast. Rye and Winchelsea were subsequently added; and the whole number, with certain towns dependent upon them, were placed under the jurisdiction of a Lord Warden, whose duties now, however, are merely nominal.

Tunbridge Wells is a favourite watering-place. *Lewes* was the scene of Simon de Montfort's victory (1264). *Brighton* and *Hastings* are favourite bathing-places. *Battle*, about eight miles to the north-west of Hastings, was the scene of the Conqueror's victory (1066). *Chichester* is a cathedral town. *Winchester* is one of the most ancient towns in the kingdom, and before the Conquest was regarded as the capital; it possesses a magnificent cathedral. *Portsmouth* is the chief naval station in the kingdom; it has a large arsenal and dockyard, and is strongly fortified. The population is 113,000. Adjacent to *Weymouth* is the important naval station of *Portland*. *Exeter* is a county town and cathedral city. *Plymouth*, which also includes Stonehouse and Devonport, ranks next to Portsmouth as a station for the royal navy. *Tiverton* has a large lace factory; hand-made lace is produced at Honiton, and in other towns of Devon. *Torquay* is a favourite watering-place. At Torbay the Prince of Orange landed in 1688. *Truro* is said to be the neatest town in Cornwall. *Penzance* is remarkable for its mild climate in winter, and is therefore a favourite resort for invalids; it was the birthplace of Sir Humphrey Davy (1778). *Bath*, a beautiful city on the Lower Avon, is celebrated for its thermal springs. *Wells* is celebrated for its ecclesiastical structures, especially its cathedral and Episcopal palace. *Taunton*, on the Tone, was one of the first towns in England in which the woollen manufacture was established. At the junction of the Tone and Parret is the *Isle of Athelney*, where King Alfred for a time found refuge from the Danes. *Sedgemoor*, near *Bridgewater*, was the scene of Monmouth's defeat (1685). *Salisbury* is a county town and cathedral city. About seven miles north of Salisbury are the famous ruins known as *Stonehenge*. *Swindon* is an important station on the Great Western Railway, and has a large manufactory of locomotives and machinery.

STONEHENGE.

Windsor, in Berkshire, is famous for its royal castle. The town is connected by a bridge with *Eton*, in Buckinghamshire. *Newbury*, on the Kennet, was the scene of two battles during the Civil War; the first in 1643, the second about twelve months later. *Wantage*, in the northern part of the county, was the birthplace of King Alfred. *Richmond*, during the summer months, is a favourite resort for visitors from the metropolis; the view of the Thames valley from Richmond Hill is celebrated. *Kingston*, during Saxon times, was a royal residence, and eight Saxon kings were crowned here. A rude stone, still preserved, is said to have been the throne on which the sovereigns sat at their coronation. *Epsom* is celebrated for its races; two centuries ago it was famous for its mineral waters. In the north-west corner of Surrey is *Runnymead*, where King John signed the Magna Charta (1215)

Welsh Counties.

Flint—Flint, Holywell, Mold, St. Asaph.
Denbigh—Denbigh, Wrexham, Ruthin, Llangollen.
Carnarvon—Carnarvon, Bangor, Conway.
Anglesea—Beaumaris, Holyhead, Amlwch.
Merioneth—Dolgelly, Bala.
Montgomery—Montgomery, Newton, Welshpool.
Radnor—New Radnor, Presteign.
Cardigan—Cardigan, Aberystwith, Lampeter.
Pembroke—Pembroke, St. David's, Haverfordwest, Milford.
Carmarthen—Carmarthen, Llanelly, Llandovery.
Brecknock—Brecon, Hay, Builth.
Glamorgan—Cardiff, Merthyr Tydvil, Swansea, Llandaff.

Flint is upon the whole a flat county, and there is more good land in it than in other Welsh counties. Mining gives employment to large numbers of the inhabitants. The surface of **Denbigh** is for the most part rugged and mountainous; but it contains two beautiful and fertile vales—those of Clwyd and Llangollen. Dairy-farming is carried on to a considerable extent, and the minerals are valuable. **Carnarvon** is the most mountainous county in the principality, being traversed throughout its whole extent by the Snowdon range. It contains valuable slate quarries, especially those at Penrhyn, near Bangor. **Anglesea** has been mentioned in describing the coast-line. **Merioneth** is wild, rugged, and picturesque; there are valuable mines of copper, lead, and slate. **Montgomery** is wild and mountainous, except in the valley of the Severn. Only a small portion of the land is under tillage, the rest is chiefly devoted to grazing and dairy-farming. **Radnor** is hilly, and in some parts mountainous, and there is a good deal of marsh and moorland. Large numbers of sheep and cattle are raised. The surface of **Cardigan** is hilly and mountainous, though there are some fertile river valleys. The district along the coast is said to be the finest turnip and barley land in the United Kingdom. The surface of **Pembroke** is undulating, none of the hills reaching 2000 ft. The soil is of various qualities. Coal and iron are worked to some extent. **Carmarthen** is, upon the whole, a mountainous country, but there are some fine valleys, especially the vale of the Towy. Much of the soil is well adapted for tillage, but agriculture is in a backward condition. **Brecknock** is rugged and mountainous, but there are some beautiful valleys, such as those of the Usk and other lesser streams. The northern part of the county is mountainous, but rich in coal and iron; the southern part, known as the *Plain of Glamorgan*, is one of the most fertile corn districts in Wales.

St. Asaph, *Bangor*, *St. David's*, and *Llandaff* are cathedral cities. *Holywell* derives its name from the famous well of St. Winifred, which, in former times, was believed to possess miraculous properties. *Denbigh* stands near the middle of the beautiful vale of Clwyd, at the base and on the side of a steep hill, which is crowned by the ruins of a fine old castle. *Conway*, *Carnarvon*, and *Harlech* are also famous for the remains of their ancient castles. In Carnarvon Castle the first Prince of Wales was born (1285). At *Fishguard*, in Pembrokeshire, the French made a descent in 1797, but they were compelled to surrender to about half their number of militia raised by Lord Cawdor.

SCOTLAND.

PHYSICAL CHARACTER.

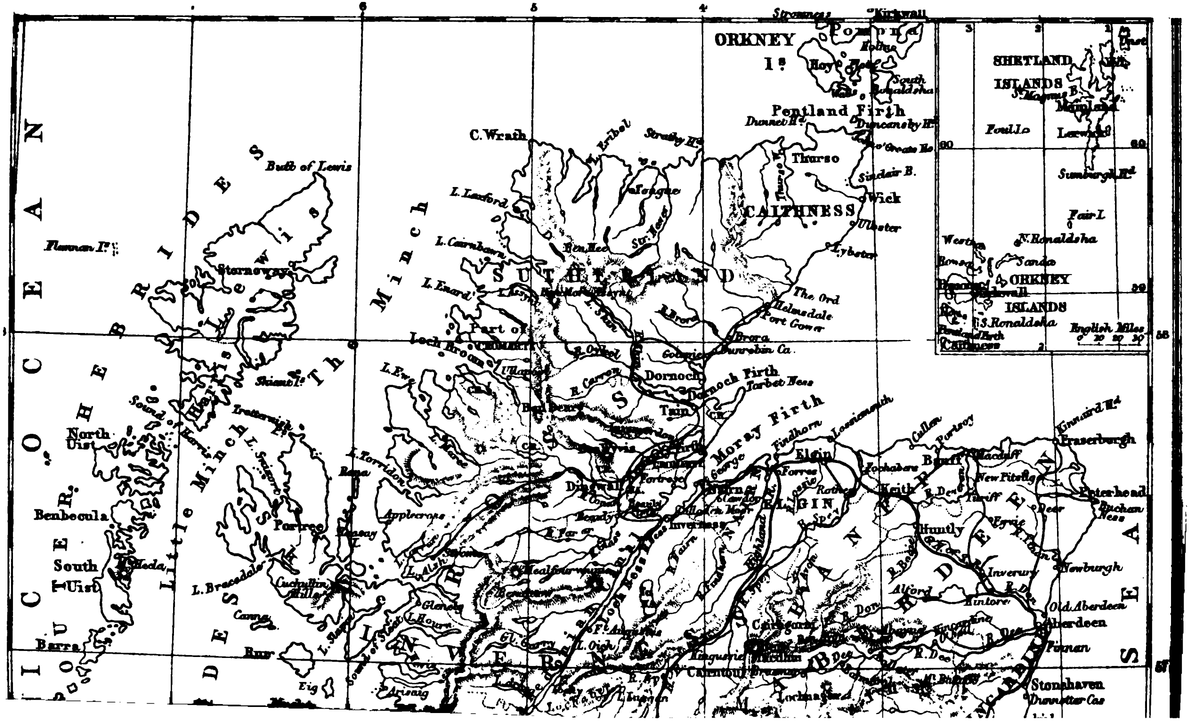
BOUNDARIES AND EXTENT.—Scotland occupies the northern portion of the island of Great Britain, and is separated from England by the river Tweed, the Cheviot Hills, and Solway Frith. It is bounded on the east by the German Ocean, and on the north and west by the Atlantic. In the south-west it is separated from Ireland by the North Channel, which, in its narrowest part, is only fourteen miles across. The length of Scotland, from Dunnet Head to the Mull of Galloway, is 278 miles; its breadth varies from 32 to 146 miles; and its area, exclusive of its numerous islands, is about 26,000 square miles; but if we include the islands, the area exceeds 30,000 square miles.

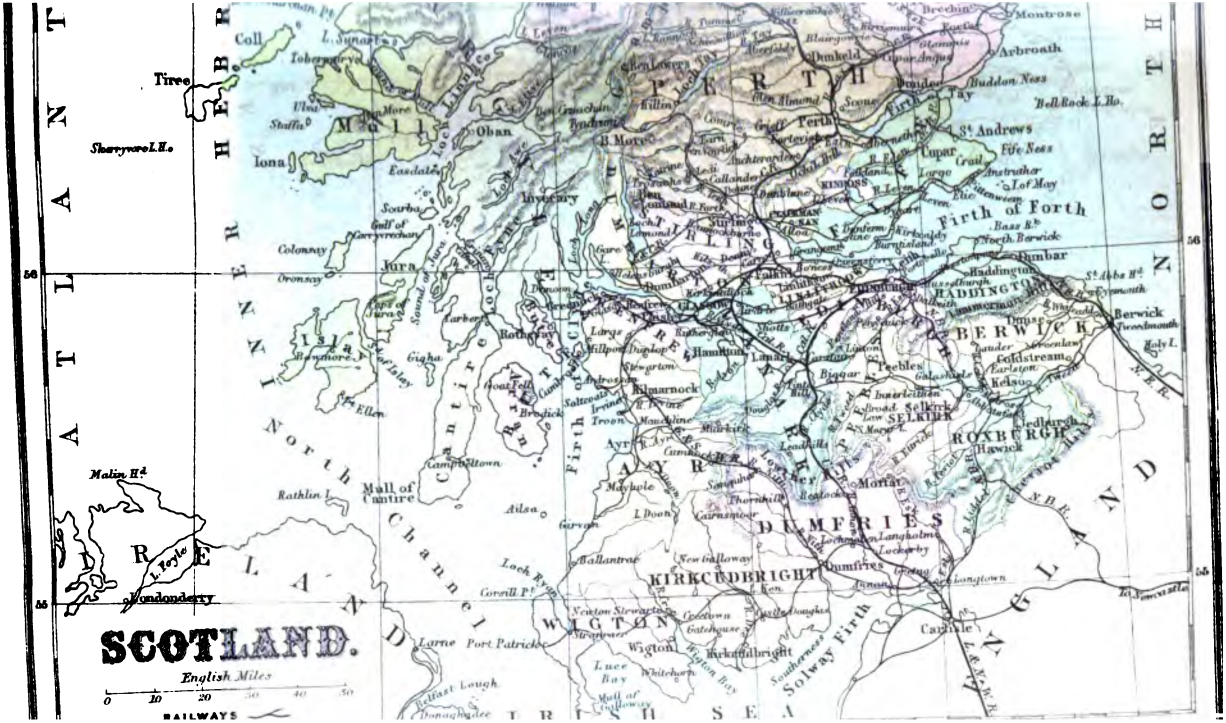
Dunnet Head, the most northern point in the mainland of Scotland, is in lat. 58° 41′; the Mull of Galloway, in lat. 54° 38′. Buchan Ness, the most easterly point, is 1° 46′ east longitude; Ardnamurchan Point, the most westerly, is 6° 13′ west longitude.

COAST-LINE.—Commencing on the south-west we find the shores of **Solway Firth** low and sandy, but becoming bolder as we proceed westward. Passing Wigton Bay, **Burrow Head**, and Luce Bay, we reach a peninsula terminating in the south in the **Mull of Galloway**, and in the north in **Corsill Point**, to the east of which is **Loch Ryan**. We have now entered the **Firth of Clyde**, which, for the most part, is of considerable breadth, except to the north of the Cumbrae Islands, where it is narrowed to a mere channel. The coast of Ayrshire, which forms the eastern boundary of the firth, consists of low shores, except towards the extreme N. and S.

Ailsa Craig is a conspicuous object from the Ayrshire coast. It is a mass of trap rock rising to the height of 1100 ft., and almost perpendicular on one side. It is frequented by innumerable flocks of sea-fowl.

The two **Cumbraes**, together with larger islands of Bute and Arran, form together a Scottish county. **Bute** is remarkable for the mildness of its climate; its chief town is *Rothesay*. **Arran**, lying further south, is a much larger


ORKNEY Is
Stromness
Kirkwall
Hoy
South Ronaldsha
Pentland Firth
Dunnet Hd.
Duncansby Hd.
Thurso
Sinclair B.
Wick
CAITHNESS
Ulbster
Lybster
The Ord
Helmsdale
Port Gower
Brora
Dunrobin Ca.
Golspie
Dornoch
Dornoch Firth
Tarbet Ness
Tain
Moray Firth
Findhorn
Lossiemouth
Cullen
Portsoy
Kinnaird Hd.
Fraserburgh
Banff
Macduff
New Pitsligo
Peterhead
Buchan Ness
Elgin
Forres
Fochabers
Keith
Rothes
Huntly
Turriff
Deer
Inverury
Newburgh
Alford
Kintore
Old Aberdeen
Aberdeen
Portlethen
Stonehaven
Dunnottar Cas.
C. Wrath
Strathy Hd.
L. Laxford
L. Cairnbawn
L. Enard
SUTHERLAND
Ben Hee
Part of CROMARTY
Loch Broom
Ullapool
L. Ewe
R. Carron
S
L. Torridon
Applecross
Dingwall
Fortrose
Nairn
Inverness
Beauly
Cawdor
Culloden Moor
ELGIN
R. Spey
R. Nairn
Loch Ness
Ft. Augustus
L. Oich
Gl. Garry
Kingussie
Braemar
Lochnagar
R. Dee
R. Don
L. Alsh
Glenelg
L. Hourn
Arisaig
Eig
Rum
Canna
Cuchullin Hills
L. Bracadale
Portree
Raasay
L. Snizort
Skye
Sound of Sleat
Trotternish
Shiant Is.
The Minch
Little Minch
Sound of Harris
Harris
Lewis
Stornoway
Butt of Lewis
Flannan Is.
North Uist
Benbecula
South Uist
Barra
HEBRIDES
OCEAN
SEA
SHETLAND ISLANDS
St. Magnus B.
Mainland
Foula I.
Lerwick
Sumburgh Hd.
Fair I.
N. Ronaldsha
Sanda
ORKNEY ISLANDS
S. Ronaldsha
Pentland Firth
Caithness
English Miles
0 10 20 30
58
57
60
59


SCOTLAND.
English Miles
0 10 20 30 40 50
RAILWAYS
ATLANTIC
HEBRIDES
INNER HEBRIDES
NORTH
GERMAN
ENGLAND
IRELAND
IRISH SEA
North Channel
Firth of Forth
Firth of Clyde
Solway Firth
PERTH
ARGYLE
MULL
ISLAY
CANTIRE
ARRAN
STIRLING
DUMBARTON
FIFE
LINLITHGOW
EDINBURGH
HADDINGTON
BERWICK
RENFREW
LANARK
PEEBLES
SELKIRK
ROXBURGH
AYR
DUMFRIES
KIRKCUDBRIGHT
WIGTON
Coll
Tiree
Mull
Iona
Staffa
Ulva
Tobermory
Oban
Inverary
Easdale
Scarba
Colonsay
Oronsay
Jura
Gigha
Campbeltown
Mall of Cantire
Rathlin I.
Ailsa
Malin Hd.
Londonderry
L. Foyle
Larne
Port Patrick
Belfast Lough
Donaghadee
Montrose
Arbroath
Brechin
Dundee
Perth
Dunkeld
Crieff
Stirling
St. Andrews
Fife Ness
Cupar
Bell Rock L.Ho.
Buddon Ness
Dunbar
Haddington
Berwick
Tweedmouth
Holy I.
St. Abbs Hd.
Edinburgh
Glasgow
Paisley
Greenock
Rothesay
Largs
Kilmarnock
Ayr
Troon
Ardrossan
Hamilton
Lanark
Biggar
Peebles
Selkirk
Jedburgh
Hawick
Kelso
Coldstream
Moffat
Dumfries
Lockerby
Langholm
Annan
Longtown
Carlisle
Kirkcudbright
Wigton
Whithorn
Stranraer
Girvan
Ballantrae
Loch Ryan
Corsill Pt.
Newton Stewart
New Galloway
Gatehouse
Castle Douglas
Wigton Bay
Luce Bay
Mull of Galloway
L. & N.W.R.
N.E.R.
N.B.R.
To Newcastle

island, and contains *Goat Fell,* which rises to the height of 2900 ft.; the chief village is *Brodick.* West of Bute, **Loch Fyne** stretches up into the heart of Argyleshire. At the entrance to the loch, the village of Tarbert stands on a narrow isthmus which joins the peninsula of **Cantire** to the mainland. Further north the Crinan Canal connects Loch Fyne with the **Sound of Jura,** and travellers bound for the west coast can thus avoid the long and dangerous passage round the **Mull of Cantire.**

AILSA CRAIG.

The west coast of Scotland, taken as a whole, forms a large convex curve, but the line is broken by numerous indentations. In its rugged shores, deep inlets, and numerous islands, it bears a striking resemblance to the coast of Norway and the west coast of Ireland; and all three countries, doubtless, owe their rugged coasts to the stormy waves of the Atlantic. Passing **Islay, Jura,** and some smaller islands, we reach Oban at the entrance to **Loch Linnhe.** *Oban* is a great centre for tourists, and it is proposed to connect it by rail with the towns in Perthshire. Opposite to Oban is the large island of **Mull,** separated from the mainland by the Sound of Mull. To the west of Mull are two small but interesting islands—Iona and Staffa.

Iona is interesting as being, perhaps, the first spot in Scotland where Christianity was preached, and it was long famous for the monastery established there by St. Columba in the sixth century. It was regarded as a place of peculiar sanctity, and several of the ancient sovereigns of Norway, Scotland, Ireland, and France were there buried. The ruins of a cathedral, built in the thirteenth century, form a striking landmark. **Staffa** is famous for **Fingal's Cave**, one of the most wonderful natural excavations in the world. The cave is about 200 ft. long, 40 ft. wide, and about 70 ft. in height. The sides are formed of basaltic columns of great symmetry, most of them being hexagonal. In calm weather boats can sail almost the whole length of the cave.

FINGAL'S CAVE.

Continuing our course to the northward, we pass **Ardnamurchan Point** and reach the **Sound of Sleat**, which separates the island of **Skye** from the mainland. This island, like Staffa and Mull, is of volcanic formation, and is covered with mountains. The scenery is extremely wild and grand;

THE QUAIRANG, SKYE.

the soil is not adapted to agriculture, but large numbers of sheep and black cattle are reared. The chief town is *Portree.*

To the west of Skye, and separated from it by the **Little Minch,** are the islands of North Uist, Benbecula, South Uist, and Barra. North of this group is a larger island which bears the names of **Lewis** and **Harris.** This island, and the smaller ones lying to the south, are sometimes called the Outer Hebrides. *Stornoway,* the chief town in Lewis, is principally engaged in the herring and whiting fisheries. The island is separated from the mainland by the **Minch.** The west coast to the north of Skye is wild, rugged, and deeply indented, the chief inlet being **Loch Broom,** round the shores of which are some fertile tracts of land.

The coast at **Cape Wrath** is very fine, the cliffs rising to the height of 600 ft. The coast-line runs eastward to Duncansbay Head, and the shores still keep their rocky character. **Dunnet Head** is the most northerly point in Great Britain. In the neighbourhood of **Duncansbay Head** is *John o' Groats House,* though there is not a stone to mark the site. **Pentland Firth** separates the Orkney Islands from the mainland: the Orkneys and Shetlands together form a Scottish county.

The **Orkney Islands** form a group which is separated from the mainland by a channel which is about six miles wide. None of the islands can be called mountainous, except **Hoy,** which rises in one point to an elevation of 1600 ft.; and on the western side there are precipices 1000 ft. in perpendicular height. The climate is humid, but not very cold, and the soil generally barren. The chief occupation of the people is connected with the fisheries, and large quantities of herring, cod, and lobsters are annually sent to London. *Kirkwall,* on **Pomona,** the chief island, is the principal town; it contains a fine cathedral. The **Shetlands** are separated from the Orkneys by a channel 48 miles in width. The principal island is **Mainland,** on which stands the town of *Lerwick.* The shores of all the islands are very rugged, and in **Foula** there are cliffs 1200 ft. in height. Fishing, with the knitting of fine woollen shawls, veils, gloves, and stockings form the chief employment of the people.

From Duncansbay Head the coast runs south-west to **Dornoch Firth,** and there is scarcely a good harbour in the whole stretch. The shores remain rocky in Caithness, but after passing the **Ord** they become low and sandy. Dornoch Firth is separated from **Cromarty Firth** by a tongue of low land which terminates in **Tarbet Ness.** Moray Firth is a wide bay communicating on the west with Cromarty Firth, and on the south-west with **Loch Beauley.** Cromarty Firth is one of the finest and safest harbours in the east coast of Great Britain, The coast now runs eastward to **Kinnaird's Head**; the shores continue low and sandy, except towards the extreme east, and there are no inlets of any importance. To the south-east of Kinnaird's Head is **Buchan Ness**, and here are the **Bullers of Buchan**, which consist of high rocks surrounding a sheet of water, which communicates with the sea by a natural archway. In stormy weather the waves dash through the opening with great fury. From Buchan Ness the coast runs south-west to the **Firth of Tay**, and the coast is, for the most part, bold and rocky, and is penetrated in some places by large caverns. About twelve miles from the entrance of the firth is the **Bell Rock**, a dangerous ridge about 800 yards long and 100 broad. A magnificent lighthouse has been erected upon it. The coast of Fife, which is rocky but not high, terminates eastward in **Fife Ness**. Rounding this point, and passing the **Isle of May**, we enter the **Firth of Forth.** This estuary is about ten miles wide at the entrance, but soon expands to double that width. It contains good anchorage ground, but few good harbours. On the south side of the entrance is **Bass Rock**, which is of a conical form, and rises to the height of 400 ft. The coast now runs south-east, and is at first rather low; but **St. Abb's Head**, which terminates the Lammermuir Hills, is a bold rocky promontory. The shores now assume a bolder character, and rocky cliffs continue as far as Berwick.

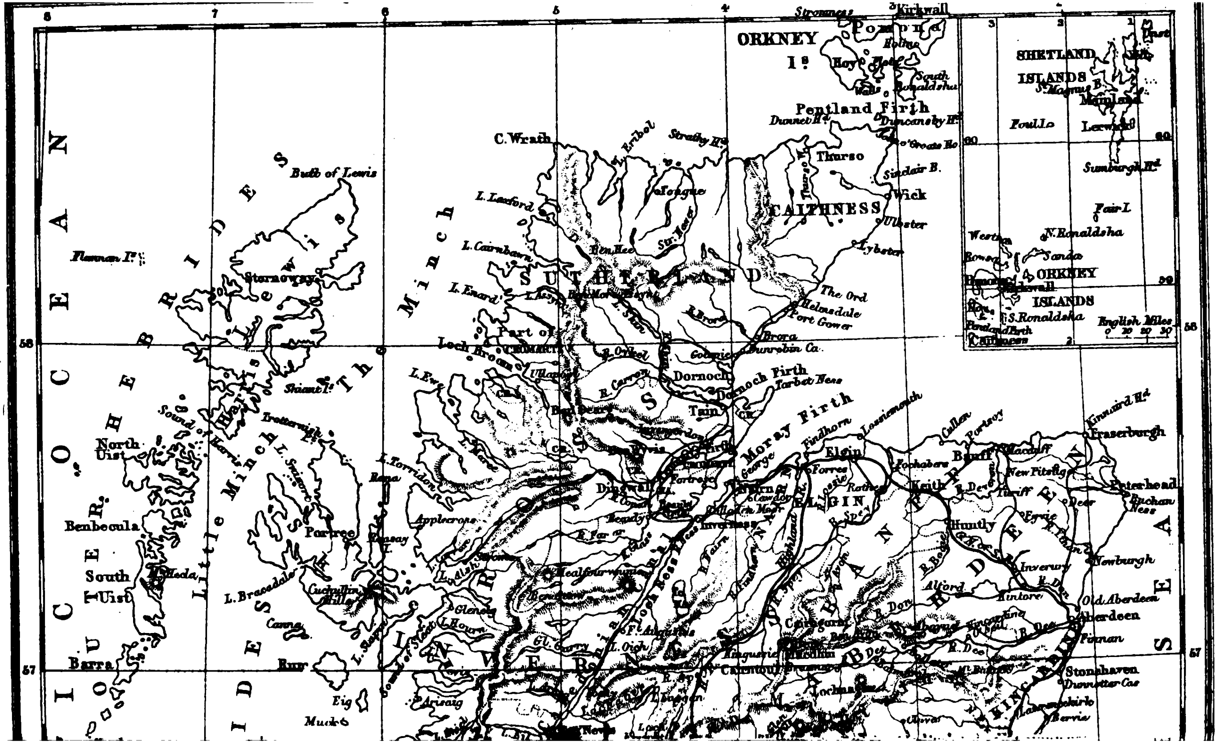
The total length of coast-line is about 2500 miles.

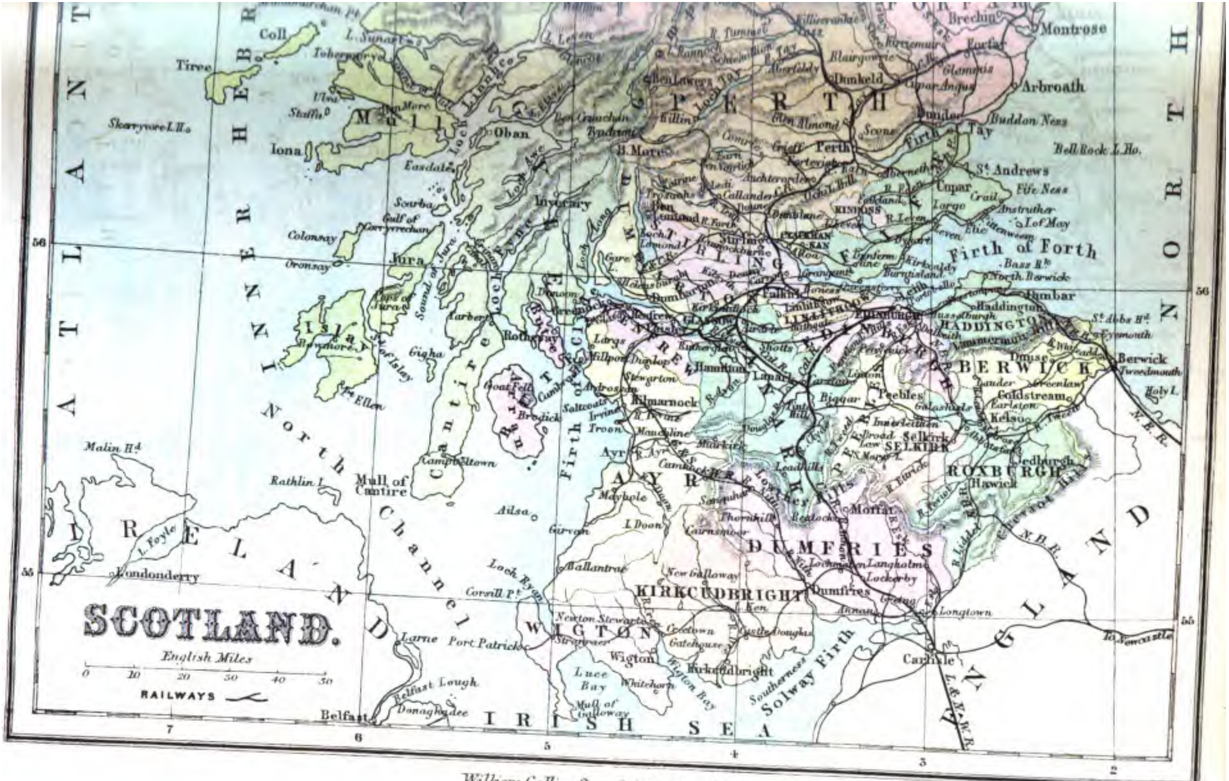
SURFACE.—Scotland is a very mountainous country, the level portions being of but limited extent. The surface is naturally divided into three parts, by Glenmore and the plain which extends between the estuaries of the Forth and Clyde. We shall speak of each of these parts separately.

Northern District.—*Glenmore*, or the Great Valley, is the name given to that great depression which extends from Moray Firth south-west to Loch Linnhe, and through which runs the Caledonian Canal. North of Glenmore the country is, for the most part, a dreary table-land covered with moors and morasses, and having an average elevation of about 1000 ft. The watershed dividing the streams which flow into the German Ocean from those which empty themselves into the Atlantic seems to run from north to south, but huge mountain masses rise up in various parts: among these may be mentioned **Ben Dearg** and **Ben Attow**, in the main axis, each of which reaches an elevation of about 4000 ft.; and **Ben Wyvis**, near the shores of Cromarty Firth, almost of equal altitude. The river valleys which slope down to the sea from the elevated ground of the interior, and those which open into Glenmore, contain tracts capable of cultivation, but the greater portion of the surface is only fit for sheep pasture.

The only level tracts of any extent are the plain of Caithness, which occupies about four-fifths of that country, and the low land to the west of the Moray Firth. The peninsula called *Black Isle*, between Loch Beauley and Cromarty Firth, is tame and flat; but on the western shore of the latter is a fertile tract of land which extends with increasing breadth to the shores of Dornoch Firth, and includes the peninsula which terminates in Tarbert Ness.

Central District.—The great feature in the central district of Scotland is the range of **Grampians**, which stretches from the shores of Kincardine, near Stonehaven, in a south-west direction, to the west coast of Argyleshire, between Loch Etive and Loch Fyne. At first the chain has no great elevation. **Mount Battock**, where the counties of Aberdeen, Kincardine, and Forfar meet, has an elevation of only about 2500 ft.; but **Lochnagar**, further west, reaches 3800 ft. In the south-west of Aberdeenshire the main chain is joined by a branch from the north-east, which contains a remarkable group of mountains, containing the summits of **Ben Macdhui** (4300 ft.), **Cairn Toul** (4200 ft.), **Cairngorm** (4100 ft.), and **Ben Avon**, nearly 4000 ft. in height. Following the main chain to the south-west, we find it throwing off spurs on either side, which spread over the counties of Perth and Inverness. From one of these spurs rises **Ben Nevis** (4406 ft.), the highest summit in the British Islands. In Perthshire the chief summits are **Ben Lomond, Ben More, Ben Lawers**, and **Schiehallion**, all of which, with the exception of the last mentioned, approach 4000 ft.; and Schiehallion exceeds 3500. **Ben Cruachan**, in Argyleshire, is a huge mountain mass which towers above the northern extremity of Loch Awe. To the north-east extends a dreary and sterile district known as the *Moor of Rannoch.* This tract covers an area of 400 square miles, and is destitute of trees and shrubs, except on the shores of Loch Lydoch, where a few fir trees are met with.


ORKNEY Is
Stromness
Kirkwall
Hoy
South Ronaldsha
Pentland Firth
Dunnet Hd
Duncansby Hd
John o' Groats Ho
SHETLAND ISLANDS
St Magnus B.
Mainland
Foula
Lerwick
Sumburgh Hd
Fair I.
N. Ronaldsha
Sanda
ORKNEY ISLANDS
S. Ronaldsha
English Miles
C. Wrath
L. Erbol
Strathy Hd
Thurso
Sinclair B.
Wick
Ulbster
Lybster
CAITHNESS
Tongue
L. Laxford
L. Cairnbawn
L. Enard
SUTHERLAND
The Ord
Helmsdale
Port Gower
Brora
Dunrobin Ca.
Dornoch
Dornoch Firth
Tarbet Ness
Tain
Moray Firth
Findhorn
Lossiemouth
Elgin
Forres
Nairn
Cawdor
ELGIN
Inverness
Dingwall
Fortrose
Beauly
Culloden Moor
Loch Ness
Part of CROMARTY
Loch Broom
Ullapool
L. Ewe
L. Maree
L. Torridon
Applecross
Raasa
Lochalsh
Glenelg
L. Hourn
Gl. Garry
L. Oich
Ft. Augustus
R. Spey
Kingussie
Fochabers
Banff
Macduff
Portsoy
Cullen
Keith
Huntly
Turriff
New Pitsligo
Kinnaird Hd
Fraserburgh
Peterhead
Buchan Ness
Deer
Newburgh
Inverury
Alford
Kintore
Old Aberdeen
Aberdeen
R. Don
R. Dee
R. Deveron
Braemar
Stonehaven
Dunnottar Cas
Laurencekirk
Bervie
KINCARDINE
Butt of Lewis
Stornoway
Lewis
Flannan Is
The Minch
Little Minch
Shiant Is
Harris
Sound of Harris
North Uist
Benbecula
South Uist
Barra
Trotternish
Portree
L. Bracadale
Cuchullin Hills
Canna
Rum
Eig
Muck
Sound of Sleat
Arisaig
HEBRIDES
OCEAN
SEA
INVERNESS
ABERDEEN
BANFF
8
7
6
5
4
3
2
1
57
58
59
60


SCOTLAND.
English Miles
0 10 20 30 40 50
RAILWAYS
ATLANTIC
NORTH
INNER HEBRIDES
PERTH
STIRLING
DUMBARTON
ARGYLL
RENFREW
LANARK
AYR
HADDINGTON
LINLITHGOW
EDINBURGH
BERWICK
ROXBURGH
SELKIRK
PEEBLES
DUMFRIES
KIRKCUDBRIGHT
WIGTON
FIFE
KINROSS
CLACKMANNAN
BUTE
ARRAN
FORFAR
IRELAND
ENGLAND
IRISH SEA
North Channel
Firth of Clyde
Firth of Forth
Firth of Tay
Solway Firth
Montrose
Brechin
Forfar
Arbroath
Dundee
Perth
Dunkeld
Blairgowrie
Oban
Mull
Iona
Coll
Tiree
Staffa
Jura
Islay
Colonsay
Oronsay
Gigha
Cantire
Mull of Cantire
Campbeltown
Rothesay
Inverary
Stirling
Falkirk
Glasgow
Paisley
Greenock
Dumbarton
Hamilton
Lanark
Kilmarnock
Ayr
Troon
Irvine
Saltcoats
Ardrossan
Largs
Girvan
Maybole
Ailsa
Stranraer
Newton Stewart
Wigton
Whithorn
Luce Bay
Wigton Bay
Mull of Galloway
Kirkcudbright
Dumfries
Lockerby
Langholm
Moffat
Annan
Carlisle
Longtown
Hawick
Jedburgh
Kelso
Coldstream
Melrose
Galashiels
Selkirk
Peebles
Biggar
Dunbar
Haddington
North Berwick
Berwick
Tweedmouth
St. Andrews
Cupar
Crail
Fife Ness
Buddon Ness
Bell Rock L. Ho.
Belfast
Belfast Lough
Donaghadee
Larne
Port Patrick
Londonderry
L. Foyle
Malin Hd.
Rathlin I.
Skerryvore L. Ho.
Bass Rk.
I. of May
St. Abbs Hd.
Holy I.
To Newcastle
N.B.R.
N.E.R.
L. & N. W. R.
56
55
7
6
5
4
3
2
William Collins Sons & Co. London & Glasgow.

To the north of the Grampians is a range of less elevation known as the **Monadh Liadh** Mountains, which separates the basins of the Findhorn and Spey; and other parallel ranges, decreasing in height, lead to Glenmore. On the southern side of the Grampians extends a plain of great fertility called *Strathmore*. It stretches from Stonehaven, in Kincardine, to Dumbarton on the Clyde, and varies in breadth from one to sixteen miles. This plain is bounded on the south by three ranges of hills which all run in the same direction. These are the **Campsie Hills**, between the Clyde and the Forth; the **Ochil Hills**, between the Forth and the Tay; and the **Sidlaw Hills**, in the county of Forfar. South of the Campsie and Ochil Hills the country subsides into the *Plain of the Clyde and Forth*. Another level tract of considerable extent in the central district extends along the coast from Moray Firth round to Kincardine. In the north-east of Aberdeen this tract is of considerable breadth.

Southern District.—In this district the principal range of mountains is that known as the **Lowther Hills**, which springs off from the Cheviots, and running in a zig-zag direction to the south-west, terminates on the west coast near Loch Ryan. Several summits in this range rise between 2000 and 3000 ft. in height; among these may be mentioned Hart Fell, Queensberry Hill, Lowther Hill, and Black Larg. **Hart Fell** and **Queensberry Hill** are near the sources of the Tweed and Clyde respectively; **Lowther Hill** (2400 ft.) lies to the north-west of Queensberry Hill, and **Black Lrag** to the south-west of Lowther Hill, on the borders of Dumfries and Kirkcudbright. **Cairnsmuir**, in the south-west of the latter county, has an elevation of 2600 ft. From Hart Fell a range of high ground runs northward, between the basins of the Tweed and Clyde, and is connected with the **Muirfoot** and **Lammermuir Hills**. Parallel with the latter, and separated from them by the river Esk, are the **Pentland Hills**, which terminate at Edinburgh in **Arthur's Seat.**

The Pentland Hills form a portion of the southern boundary of the Plain of the Clyde and Forth, which not only stretches across the country from the Firth of Forth to the mouth of the Clyde, but embraces the greater portion of the county of Ayr. To the east of Edinburgh, and extending as far as St. Abb's Head, is another level tract of great fertility; and to these may be added the level district in the lower part of the basin of the Tweed, and the plain which extends along the northern shores of Solway Firth.

MINERALS.—The chief minerals are coal, iron, lead, slate, granite, and building stone.

If we draw two lines, one from Stonehaven to the Firth of Clyde, and the other from St. Abb's Head to Girvan, in Ayrshire, we shall include the great **coal** and **iron** district of Scotland. In this district there are more than 400 collieries which produce annually above 15,000,000 tons of coal. In the same district there are about 130 furnaces in blast, which produce above 1,000,000 tons of pig-iron annually. The counties in which the iron-works are most numerous are Lanark and Ayrshire. Large quantities of **lead** are produced from the mines in the counties of Lanark and Dumfries; and in the latter county the lead contains a considerable quantity of silver. **Granite** is worked to a large extent in the neighbourhood of Aberdeen and Peterhead. **Slate** is abundant at Easdale, on the coast of Argyleshire, and other places; and good building stone is abundant in many parts, but especially in the neighbourhoods of Glasgow and Edinburgh.

RIVERS.—We have seen that the chief mountain chains and hill ranges in Scotland run from east to west, while in England they run north and south: yet in both countries the principal rivers flow to the east; in Scotland the only exception is the Clyde. This shows that the general slope of the surface is, in both countries, the same. The rivers of Scotland, however, differ from those of England in being more rapid, and in containing a greater number of cascades. This is owing to the fact that their sources are generally much higher than those of English rivers. Owing also to the greater variety of surface in Scotland, lakes are much more numerous, and the scenery, generally, is more picturesque.

To the north and west of Glenmore the streams are of little importance, as there is no space for the development of large rivers. The principal streams are Thurso Water, in Caithness; the river Shin, which flows into Dornoch Firth; and the Glass, which flows into Loch Beauley.

The Grampian system contains the sources of several important rivers: the Nairn, Findhorn, Spey, and Doveran, which flow northward; and the Ythan, Don, Dee, North Esk, South Esk, Tay, and Forth, which flow eastward.

The **Spey** rises in a small lake, about six miles from Loch Lochy, at an elevation of 1200 ft. It flows at first to the east through a narrow glen then turning to the north-east it flows through a broad and well-wooded valley which, in its northern part, is bounded by the Monadh Liadh Mountains on the west, and the Cairngorm range on the east. The first important feeder which it receives is the Dulnain, which joins it on the left after a course of 25 miles. The mountains on the west now give place to undulating plains, but on the east they continue as far as the confluence of the Avon. This stream has its source in *Loch Avon*, which lies in the very heart of the Cairngorm Mountains, and at an elevation of nearly 2000 ft. It is surrounded by bare cliffs, some of which rise above 1000 ft., and so overshadowed is it by Ben Macdhui and the adjacent mountains, that for several months in the year sunshine never reaches it. Issuing from the lake, the Avon flows for some distance through a dark glen which gradually widens. In no part of its course are there any extensive flats, and but a small portion of its basin is capable of cultivation. The Avon joins the Spey after a course of about 35 miles. The Spey now continues its course to the north-east, and increases in rapidity owing to the falls and rapids which occur in this part, and in the last three miles of its course it has a descent of sixty feet. The total length of the river is about 100 miles. Owing to the nature of its bed it is unfit for navigation, but large timber rafts are floated down; its salmon fisheries are also very valuable.

Basin.—The basin of the Spey is bounded on the west by the Monadh Liadh Mountains, and on the south-east by the main chain of the Grampians. A spur from Ben Avon runs northward and forms the watershed between the Spey and Doveran. The total area of its basin is about 1300 square miles.

The **Dee** rises on the southern slope of Ben Macdhui at an elevation of about 4000 ft., and has a higher source than any other river in the British Islands. Its course is at first southward through a deep and narrow glen, it then turns north-east, and flows through a valley thickly planted with fir trees. Passing *Balmoral Castle*, a favourite residence of the Queen, it is joined on the left bank by the Gairn, and on the right by the Muick. Its course is now to the east, and it enters the sea at Aberdeen after a course of about 85 miles.

Basin.—The basin of the Dee is bounded on the south by that portion of the Grampians which runs from the shores of Kincardine to the western extremity of the county of Aberdeen. The watershed then runs northward to Ben Macdhui, and east to Ben Avon, and is continued eastward by a ridge of decreasing elevation. The total area is not more than 700 square miles.

PASS OF KILLIECRANKIE.

The **Tay**, under the name of Dochart, rises on the borders of Argyleshire, to the north of Ben More. Flowing for some distance to the north-east it expands into *Loch Tay*, a beautiful sheet of water about sixteen miles in length. It now flows through a rich and well cultivated valley, and is joined on the left by the Tummel. This stream rises in the Moor of Rannoch, and drains the four lakes—Lydoch, Rannoch, Erricht, and Tummel. *Loch Erricht* lies in the heart of the Grampians, and on its wild shores Prince Charles Edward found a hiding-place for a time, after the battle of Culloden. The Tummel is joined by the Garry near the celebrated *Pass of Killiecrankie.* This pass is a narrow glen about half a mile in length, through which the Garry flows. At the northern extremity General Mackay was defeated by Dundee, who died in the moment of victory (1689). The Tummel is reckoned one of the most beautiful of Scottish rivers, and when it joins the Tay it rivals it in volume of water. After receiving the Tummel, the Tay flows southward, and the open valley gradually narrows into a glen which terminates about two miles south of Dunkeld with the *Pass of Birnam.* The river now enters the fertile plain of Strathmore, and shortly afterwards is joined by the Isla on the left bank. This tributary brings with it the waters of the Shee and the Airdle which, when united, form the Erricht. After receiving the combined waters of the Isla and Erricht, the Tay sweeps round to the south, and near Scone receives the Almond on the right bank. The stream rises to the south of Loch Tay, and, in the upper part of its course, flows through a wild and interesting valley. Below Perth the Tay expands into an estuary, into which flows the Earn. This stream has its source in Loch Earn: the upper part of its course is grand and picturesque, but at Crieff it enters Strathmore; Comrie, on the Earn, is remarkable for its frequent earthquakes, though the shocks are slight. The total length of the Tay is about 120 miles, and in volume of water it is said to exceed the Thames. It is the finest salmon river in Great Britain.

Basin.—If we begin with the main axis of the Grampians in the neighbourhood of Lochnagar, we find that the watershed does not coincide with the ridge of the mountains. It runs almost due west to the head of Loch Erricht, and then runs south-west so as to include Loch Lydoch. It now bends to the east for some distance, and then runs directly south to the source of the Tay. It now runs eastward to Ben More, and then south-east until it strikes the Ochil Hills. Crossing the estuary, we find that the boundary of the basin runs along the Sidlaw Hills as far as Forfar, and then turning north-west ends at Lochnagar. The total area thus defined is about 2400 square miles.

The **Forth** has its source in several streams that rise on the slopes of Ben Lomond. Flowing to the south-east it is joined about two miles above Stirling by the Teith. This tributary has two sources which unite at Callander. The northern branch drains Lochs Doine, Voil, and Lubnaig. The southern branch flows through the beautiful district of the Trossachs, celebrated in Scott's *Lady of the Lake*, and drains *Lochs Katrine*, *Achray*, and *Vennacher.* At Callander the Teith enters Strathmore, and flows through a fertile and undulating country. The Forth next receives the Allan, which rises on the north-western side of the Ochil Hills, and passes Dunblane. Below Stirling, the chief feeder is the Devon, which rises on the southern slope of the Ochils, and joins the Forth about two miles above Alloa. The length of the Forth, from its source to Alloa, is about 60 miles; and the estuary, which commences here, is about 50 miles in length. The Forth is a very winding river, as a great portion of its basin is very flat; this is especially the case below Stirling, where the windings of the stream are known as "the links of Forth." It contains valuable fisheries.

Basin.—The northern boundary of the basin of the Forth is partially formed by the southern watershed of the Tay. If we draw a line southward from Ben More to Ben Lomond, and continue it along the shore of

Loch Lomond, we have the western boundary. The line then runs south-east to a point on the Pentland Hills, between the sources of the Esk and Lyne, and then turns north-east to Berwick Law. The northern boundary coincides with the watershed of the Tay from Ben More to the Ochil Hills, but it then strikes south-east to Largo Bay, on the Firth of Forth. The area thus defined includes the drainage of the estuary of the Forth as well as the river, and embraces about 2000 square miles. If we look upon the Forth as terminating at Alloa, the basin has an area of only about 500 square miles.

The chief rivers which have their source in the Lowthers are the Tweed, Clyde, Ayr, and Doon, which flow from the northern slope; and the Dee, Nith, Annan, and Esk, which flow into Solway Firth.

The **Tweed** rises in the neighbourhood of Hart Fell, and flows northward until it receives the Lyne, which comes from the Pentland Hills. The river now flows to the south-east and is joined by the Ettrick. This feeder rises to the south of Hart Fell and flows north-east through a beautiful district called *Ettrick Forest.* The "forest" consists of a series of round-topped hills clothed with grass to their summits, but is almost destitute of trees, though at one time it formed part of the great Caledonian Forest. A little above Selkirk the Ettrick is joined by the Yarrow, which rises not far from the source of the Annan, and flows through St. Mary's Loch. After receiving the Ettrick, the Tweed passes Abbotsford, once the residence of Sir Walter Scott, and is joined by the Gala, on which stands Galashiels. Passing Melrose we next come to the confluence of the Leader, which rises in the Lammermuir Hills. At Kelso the Tweed is joined by the Teviot, which drains the greater part of the county of Roxburgh, and is joined by the Jed and other streams. Below Coldstream the Tweed receives the Till, an English river, near the banks of which was fought the battle of Flodden (1513). Near its mouth the Tweed is joined by the Whiteadder, which receives a feeder, upon which Greenlaw stands, called the Blackadder. The total length of the river is about 100 miles. As a salmon river it ranks next to the Tay.

Basin.—The northern boundary of the Tweed basin commences on the coast between Eyemouth and Berwick, and runs in a north-west direction to the Lammermuir Hills. It then turns westward, slightly inclining to the south, until it reaches the Pentlands at the source of the Lyne. A ridge of high ground, which runs southward from the Pentlands to Queensberry Hill, forms the western boundary. The southern boundary is formed by the Lowthers, between Hart Fell and Peel Fell, and by the Cheviots from Peel Fell to Cheviot Hill. It then makes a great sweep to the south so as to include the drainage of the Till, and finally terminates near Berwick. The whole embraces an area of nearly 2000 square miles.

The **Clyde** rises near Queensberry Hill, at an elevation of 1400 feet The river flows at first northward through a narrow valley, which however gradually opens. At the Tinto Hill the river bends round to the south-west and receives the Douglas. Shortly afterwards, in the neighbourhood of Lanark, occur the celebrated *Falls of the Clyde.* Between Lanark and Bothwell the Clyde flows through a fertile valley, celebrated for its orchards. A short distance above Bothwell the river is joined by the Avon, which rises on the borders of Ayrshire, and joins the Clyde below Hamilton after a course of 25 miles. For some distance below Bothwell the banks of the Clyde are beautifully wooded, especially where the river flows between Blantyre Priory and Bothwell Castle. Near Uddingstone the Clyde is joined, on the right bank, by the North Calder, which rises in the north-east corner of the county, and flows past Airdrie. At Glasgow the Clyde receives the Kelvin, which rises in the county of Stirling and passes Kirkintilloch. Below Glasgow the Cart, upon which Paisley stands, enters the main stream near Renfrew. At Dumbarton, where it receives the Leven from Loch Lomond, the Clyde expands into a broad estuary, which at Greenock has a width of four miles. Below this point the scenery is very beautiful, as lochs, or arms of the sea, branch off to the north and west, and mountains rise up on all sides. The length of the Clyde to Greenock is about 100 miles, and it is navigable for large vessels as far as Glasgow.

Basin.—The line from Queensberry Hill to the Pentlands forms part of the eastern boundary of the Clyde. The watershed then runs in a wavy line north-west to the Campsie Hills, and then follows the crest of these hills to Dumbarton. From the neighbourhood of Greenock a ridge of high ground runs south-east, through the Tinto Hills, to Queensberry Hill, and thus completes the boundary of the basin. The whole area thus included is about 1500 square miles.

LAKES.—We have already remarked that Scotland is celebrated for its lakes. Several of these have been mentioned in connection with the rivers to which they belong. There are others, however, which require a brief notice: these are Lochs Lomond, Awe, Ness, Maree, Shin, and Loch Leven.

Loch Lomond, the largest lake in Great Britain, lies between the counties of Stirling and Dumbarton. It is about twenty-four miles long, with a breadth varying from one to seven miles. At the northern and narrower part of the lake the water is deep and the shores rocky. Ben Lomond adorns the middle part, on its eastern side, and in the southern portion there are a number of islands, most of them finely wooded. The country round this part of the lake is level, fertile, and well cultivated. The water is sweet and wholesome, and abounds with various kinds of fish. It is drained by the river Leven, which, after a course of eight miles, empties itself into the Clyde.

Loch Awe, the second in size of the Scottish lakes, lies to the south-west of Ben Cruachan, and is about twenty-five miles long and two broad. Its shores are sloping and well cultivated, but immediately beyond rise lofty mountains. About twenty islands are scattered over its surface, on some of which are picturesque ruins. The lake is chiefly fed by the Orchy, which drains the southern part of the Moor of Rannoch; and its waters are discharged by the river Awe, which flows for a distance of eight miles and empties itself into Loch Etive. The *Pass of Brander*, just where the stream leaves Loch Awe, is remarkable for its stern grandeur.

Loch Ness is one of those lakes which occupy the remarkable depression called Glenmore, and which are connected together by the Caledonian Canal. It is twenty-three miles long, and has an average breadth of one mile. On each side rise lofty and rugged mountains, from whose steep sides fall numerous cascades. Among these are the celebrated *Falls of Foyers*, about a mile from the shore of the lake. The upper fall is about 40 feet high, but in the lower one the water is precipitated at one bound into a dark pool from an elevation of 90 feet. The lake is discharged by the river Ness into the Moray Firth. Owing to its great depth it never freezes.

Loch Maree, near the west coast of Ross-shire, is about 18 miles in length. Its scenery greatly resembles that of Loch Lomond, as it is surrounded by rugged mountains and contains a number of islands. The lake discharges its waters into an inlet called Loch Ewe by a river of the same name.

Loch Shin, in the county of Sutherland, lies in a wild mountainous district, surrounded by wide spreading moors, destitute of trees or cultivation. It is about twenty-four miles long with an average breadth of one mile. Its waters are discharged by the river Shin, which flows into the Kyle of Sutherland, a branch of Dornoch Firth. About three miles below the lake there is a beautiful cascade about 20 feet in height.

Loch Leven, in Kinross-shire, is a small lake, oval in form, with a circumference of about ten miles. There are several islands, and on one of these are the ruins of the castle in which Mary Queen of Scots was imprisoned, and whence she escaped shortly before the battle of Langside (1568). The lake is drained by the river Leven, which, after a course of about twelve miles, falls into the Firth of Forth.

LOCH LEVEN.

CLIMATE.—The climate of Scotland is colder and more humid than that of England, but it is very healthy. It is colder owing to its higher latitude, and because also the surface is more elevated. But, at the same time, it is not so cold as might be expected, since its numerous indentations bring it more under the influence of the sea than is the case with England, hence the severity of its winters are tempered to a great extent, while the climate generally is very humid. The difference in climate between England and Scotland is chiefly felt in summer, when the southern part of Great Britain, owing to a greater breadth of land, experiences great heat. In winter, on the other hand, the Shetland Islands have actually a higher average temperature than London.

Natural Productions.—As the greater part of Scotland is covered with mountains there is a much larger proportion of waste land than in England; and it seems always to have been a thinly wooded country. During the present century, however, great attention has been paid to raising plantations, but still they are not spread over the country so generally as in England, but are confined chiefly to the neighbourhood of the seats of the nobility and gentry. Those thick hedgerows, also, which are such a marked feature in the English landscape, are seldom seen in Scotland. There are some considerable fir plantations, however, in some parts of the Highlands, especially in the county of Aberdeen. North of the Caledonian Canal, black swamps and dreary mosses cover a great portion of the surface. South of the Grampians there are extensive tracts of moorland, partly grassed and partly covered with heather, which in summer has a rich purple bloom. The vegetable productions of south Scotland resemble those of England. The wild animals also are similar. In the north of Scotland the stag and roebuck are preserved in a wild state for the purposes of sport; there also the eagle, now almost extinct in England, is sometimes met with. The rivers, lakes, and surrounding seas, abound with fish.

POLITICAL CHARACTER.

People.—At the time of the Roman invasion Scotland was called *Caledonia*, and its inhabitants, like those of South Britain, were probably of Celtic origin with some admixture of the Teutonic element. In the third century the Picts begin to appear in history, and the term *Pictland* began to be substituted for that of Caledonia. It is doubtful whether the Picts were a Celtic or Gothic tribe. When the Romans withdrew from Britain, and the Picts and Scots began to invade South Britain, the Britons sought the help of the Saxons. This tribe gradually obtained possession of the greater part of South Britain, and advanced as far north as the Firth of Forth. And now began that distinction between the inhabitants of the Highlands and Lowlands of Scotland, which remains to the present day. The Highlanders represent the original inhabitants of Caledonia, and are allied in race to the Welsh and Irish; the Lowlanders are essentially of the same race as the English.

The Scots, who are mentioned along with the Picts in the fifth century, seem to have been a tribe which had emigrated from Ireland; for, from the fourth century to the eleventh, Ireland was known as Scotia, and the people as Scoti. Towards the end of the eighth century a fresh colony from Ireland established itself in the district now known as Galloway—

including the counties of Wigtown and Kirkcudbright—and some time before the eleventh century another colony had established itself in the western Highlands. This colony seems to have made considerable advance in knowledge and civilization, and in a short time gave the name of *Scotland* to the Highlands, whence it was subsequently extended to all parts of the country. Besides the Celts, Picts, Scots, and Saxons, colonies of Danes and Norwegians established themselves in Caithness, and other parts of the mainland, as well as in the Orkney, Shetland, and some of the Western Islands. Thus the Scotch, like the English, are a mixed race.

The population of Scotland, according to the census of 1871, was 3,358,613. This only gives an average of 109 to the square mile, while in England the average is 389. But the northern part of the country, owing to its mountainous character, is but thinly peopled; while in the large towns the population is as dense as in any other part of Great Britain. In the neighbourhoods of Edinburgh and Glasgow, the average to a square mile is between 600 and 700.

The great bulk of the people of Scotland are Protestants. The Established Church is Presbyterian, and the Free Church and United Presbyterian Church, which are together more numerous, differ only from the Established Church in having no connection with the State. The Episcopal Church of Scotland, which in doctrine and form of worship is identical with the Established Church of England, is not a numerous body, but in its congregations are found many of the wealthiest and most influential of the laity.

Scotland, since the Reformation, has always stood high as an educated country. Universities are established at Edinburgh, Glasgow, St. Andrews, and Aberdeen; and as the system is less expensive than in England, a much larger percentage of the population receive a university education. Elementary education also occupies a high position, as an extensive system of instruction, through the agency of parochial schools, has been in existence for several generations. In 1872, however, an Act was passed assimilating the system of popular education to that established in England.

As in England, the chief industrial occupations of the people are connected with agriculture, mining, manufactures, fisheries, and commerce.

Agriculture.—Owing to its mountainous character, only about one-third of Scotland is fit for tillage; yet, taken as a whole, it is one of the best cultivated countries in Europe. As a rule, farms are larger than in England, and hence more capital can be invested in them. The consequence is that improvements are readily adopted, and the best systems of drainage, cultivation, and stock-breeding, as well as the most recent improvements in agricultural machines, are at once adopted. Scotland may be divided into three agricultural districts, corresponding to the three divisions of its surface. The country to the north of Glenmore, with the exception of the eastern parts of Ross-shire and a few other patches, is wild and mountainous, and forms a *pastoral* region, where numbers of sheep and black cattle are raised. In the central region there is another great pastoral district formed by the Grampians and their offshoots, but there are some tracts of great fertility, including the *Plain of Strathmore*, and the *Carse of Gowrie* which stretches from Perth to Dundee. The greater part of Fife is arable, and there are also fine tracts of land in the counties of Forfar, Aberdeen, and Elgin. Agriculture, however, is carried on to the greatest perfection in the southern regions, especially in the Lothians and in Berwickshire. There are also large tracts of fertile land in Lanark, Renfrew, Ayrshire, Galloway, and Dumfries; but the climate on the west coast, being more humid than on the eastern side, is more favourable to pasture lands than to arable districts. Hence Renfrew, Ayr, and Dumfries are noted for their *dairy produce*. The Lowther Hills form a third large pastoral district.

The Ayrshire cows are admirable milkers; the Galloway, Fifeshire, and Highland breeds are best for fattening, and make excellent beef. There are three principal breeds of sheep: the dun-faced, or Scandinavian breed, said to have been introduced from Denmark; the black-faced, or heath breed, the most widely diffused; and the celebrated Cheviot breed, which is famous for the fine texture of its wool and the quality of its mutton. The grain most cultivated is oats, but of late years the growth of wheat has greatly extended. This grain, however, will not ripen in the tracts north of Glenmore and west of Cromarty Firth. The fences in many parts of Scotland consist of dry stone walls which, as they seem first to have been used in the counties of Kirkcudbright and Wigtown, are generally known as *Galloway dykes*. When properly built they have been known to stand sixty, seventy, and even one hundred years.

MINING.—We have already mentioned the great coal and iron district of Scotland. As in England, these minerals are generally found associated together, and hence both coal and iron-works belong to the same localities. The manufacture of *paraffin oil* from the coal shale has of late years formed another important branch of industry in this district. The centres of **coal** and **iron** mining are at Glasgow, Airdrie, Coatbridge, and Wishaw, in Lanarkshire; at Falkirk and Carron, in Stirling; and at Bo'ness and Bathgate, in Linlithgow.

Coatbridge, about eight miles east of Glasgow, is the great seat of the Scotch pig-iron manufacture. **Airdrie** lies about two miles further east, and at both these places, as well as at **Bathgate**, there are large paraffin oil works. Airdrie and Coatbridge have each nearly 16,000 inhabitants.

Next to iron, **lead** is the most valuable mineral. The mines of Wanlockhead and Leadhills, on the borders of

Lanark and Dumfriesshire, furnish large quantities of lead; this metal is also worked in Ayrshire and Kirkcudbright.

The village of Leadhills, which has a population of about 1000 inhabitants, stands at an elevation of more than 1300 feet, and is said to be the highest inhabited place in Great Britain. Allan Ramsay, the poet, was born here (1686); his father was manager of the mines.

Good roofing **slate** is worked at Ballachulish, on Loch Leven, in Argyle, and at Easdale, an island on the coast of the same county. **Granite** is worked in the neighbourhood of Aberdeen and Peterhead; and also at Dalbeattie and Creetown, in Kirkcudbright.

MANUFACTURES.—The chief manufactures of Scotland are those of cotton, woollen, linen, and paper; together with silk, shipbuilding, and the distillation of whisky.

The **cotton** manufacture is chiefly carried on in the counties of Lanark and Renfrew; the chief centres being Glasgow, Paisley, and Johnstone. It is also carried on to some extent in the towns of Perth and Aberdeen.

The **woollen** manufacture is carried on in the valley of the Tweed, and in the counties of Ayr, Stirling, and Aberdeen. The chief towns are Galashiels, Hawick, Kilmarnock, Stirling, Bannockburn, and Aberdeen.

Galashiels was the first place where the cloth called "tweed" was manufactured. Flannels of a fine texture are also made here. **Hawick**, on the Teviot, is famous for its stockings, flannels, and blankets. **Kilmarnock** has manufactures of carpets and shawls, as well as of machinery. It is a town of considerable importance and has a population of 23,000. **Stirling** manufactures carpets and tartans; **Bannockburn**, in the same county, is noted for its tartans, shawls, and tweeds.

The **linen** manufacture is carried on chiefly in the counties of Forfar and Fife, and the chief towns engaged in the manufacture are Dundee, Arbroath, Montrose, and Forfar, in the former county; and Dunfermline, Kirkcaldy, and Cupar, in the latter.

The linen trade of **Dundee** is the most extensive in the United Kingdom. It is chiefly noted for the coarser kind of goods, and a great deal of *jute* is used. Large quantities of sacking, bagging, and sail-canvas are also made here. The population of Dundee is nearly 120,000. **Dunfermline** is noted for its fine table-linen and coloured table-cloths. Its damasks are unrivalled for beauty and finish.

The manufacture of **paper** is carried on to a considerable extent in the counties of Edinburgh, Lanark, Aberdeen, and Fife. **Silk** is manufactured at Glasgow and Paisley; Paisley is especially noted for its shawls and cotton thread. **Ship-building** is carried on at most of the ports, but especially at Glasgow, Greenock, Dumbarton, Aberdeen, and Dundee. Iron vessels are built on the Clyde more extensively than in any other part of the United Kingdom. **Whisky** is distilled in almost every part of the country.

INTERNAL COMMUNICATION.—The rivers of Scotland are not so well adapted to navigation as those of England, but the Tay and Forth have noble estuaries, and the Clyde has been so deepened that vessels of 3000 tons burthen can now reach Glasgow. Excellent roads have been constructed in all parts of the country, and nearly 3000 miles of railway have been opened. There are two principal canals, the *Caledonian Canal,* and the canal uniting the *Forth and Clyde.*

The **Caledonian Canal**, which runs through Glenmore, connects together Lochs Linnhe, Lochy, and Ness. It cost an immense sum of money, and was intended to provide vessels with the means of passing from one coast to the other without undergoing the dangerous voyage round the north of Scotland. But it has not been successful as a commercial speculation. The principal **railways** centre in the two chief towns, Edinburgh and Glasgow. There are four great systems: the North British, the Caledonian, the Glasgow and South-Western, and the Highland Line.

FISHERIES.—The chief *salmon* fisheries of Scotland belong to the rivers Tay, Tweed, Spey, and Dee. The fish being packed in pounded ice are sent in considerable quantities to London and Liverpool. But this fishery is not so valuable as formerly, partly owing to a diminished supply in the rivers, and partly owing to the competition with Irish and foreign salmon in the London market. The *herring* fishery, on the other hand, is every year growing more important; the chief places engaged in it are Wick, Stornoway, Peterhead, Fraserburgh, Findhorn, Helmsdale, Eyemouth, the Orkney Islands, and the Firth of Clyde. The *cod, ling,* and *hake* fisheries are carried on to a great extent in the Shetlands and Orkneys, and in Lewis, Stornoway being the centre. Buckie, on the coast of Banff, is also a great fishing centre. The fish taken are chiefly cod, ling, haddock, whiting, skate, and flounder. The turbot and haddock are also occasionally caught. Most of the herrings, cod, and other fish taken, are packed with salt in barrels and exported to the Continent.

Finnan, or Findon, a fishing village on the coast of Kincardine, has long been celebrated for its preparation of smoked haddocks. The smoking is done by green branches of fir, especially spruce, which give to the fish its peculiar odour and rich brown colour. For a long time Finnan was unrivalled, but other stations on the coasts of Kincardine and Aberdeen are, in the opinion of many, now equal to it.

Peterhead and **Dundee** are the great stations in Scotland for the *whale* and *seal* fisheries. The whales are caught in Davis' Strait, and the seals to the north of Iceland.

COMMERCE.—The foreign trade of Scotland resembles that of England, and the exports consist chiefly of agricultural produce, manufactured goods, and the produce of the mines and fisheries. The imports are chiefly raw material for manufactures, and colonial produce. Most of the agricultural produce is sent to England. Large quantities of coal are shipped from Irvine, Ardrossan, and Troon, for Ireland. The flax and hemp used in the linen manufacture are brought from the continent of Europe, especially from the countries round the Baltic. Jute, a kind of hemp, is imported from India. The chief ports are Glasgow, Greenock, Port-Glasgow, Leith, Dundee, and Aberdeen.

Glasgow is the centre of the manufactures and commerce of Scotland. It contains manufactories of cotton, silk, machinery, and chemical products; and the building and fitting up of steam ships is a branch of business extensively pursued. Vessels of 3000 tons burthen can reach the city. The population is over 500,000.

Greenock, about twenty miles below Glasgow, has important manufactories and considerable trade. Shipbuilding and sugar-refining are carried on to a great extent. **Port-Glasgow**, a little further up the river, was formerly the out-port of Glasgow. It still has a large trade in importing timber.

Leith, in the Firth of Forth, is the port of Edinburgh: it has considerable trade with the Baltic. **Dundee**, on the estuary of the Tay, has been already noticed. It trades chiefly with London and the Baltic. **Aberdeen**, at the mouth of the Dee, has important cotton and woollen manufactures, iron founderies, and shipbuilding yards. *Old Aberdeen*, at the mouth of the Don, is a mere village; it derives all its importance from its college. This college, together with Marischal College in the new town, forms the University of Aberdeen. The population of Aberdeen is about 90,000.

Dumfries, near the mouth of the Nith, is a handsome town, and is considered the metropolis of this part of Scotland. It is the outlet for the agricultural produce of the surrounding counties, great quantities of which are sent to England. The poet Burns died here in 1796.

COUNTIES.—Scotland is divided into thirty-three counties. The following is a list, with some of the chief towns: the county town in all cases coming first:—

NORTHERN COUNTIES.

ORKNEY AND SHETLAND—Kirkwall, Lerwick.
CAITHNESS—Wick, Thurso,

Sutherland—Dornoch, Helmsdale, Brora.
Ross—Dingwall, Tain, Stornoway.
Cromarty—Cromarty, Ullapool.
Inverness—Inverness, Fort George, Portree.
Nairn—Nairn.
Elgin, or Moray—Elgin, Forres, Fochabers.
Banff—Banff, Keith, Portsoy, Cullen.
Aberdeen—Aberdeen, Peterhead.

The **Orkney** and **Shetland** Islands for a long time belonged to Norway; but on the marriage of James III. with Margaret, Princess of Denmark, in 1468, they were handed over to the crown of Scotland. The counties of **Caithness** and **Sutherland** were annexed to the Orkneys in the tenth century, but by William the Lion they were restored to Scotland two centuries later.

Wick is the great centre of the Scottish herring fishery; about a thousand boats are annually employed. Dunrobin Castle, to the south of *Brora*, is the seat of the Duke of Sutherland. *Cromarty*, at the entrance of Cromarty Firth, was the birthplace of Hugh Miller, the eminent geologist (1802). *Ullapool* stands on the shores of Loch Broom. About five miles to the east of Inverness is *Culloden Moor*, where the young Pretender was defeated (1746). Fort George, Fort Augustus, and Fort William were built at various times to overawe the Highlanders; the two last have been dismantled, but *Fort George* is a place of considerable strength. *Nairn* is a favourite bathing place. *Elgin* is a well-built city; its ancient cathedral is one of the most magnificent ruins in Scotland.

BALMORAL CASTLE.

In the western part of the county of Aberdeen, upon the banks of the Dee, amidst wild and picturesque scenery, is *Balmoral Castle*, a favourite residence of the Queen.

Central Counties.

Kincardine—Stonehaven, Lawrencekirk, Finnan.
Forfar, or Angus—Forfar, Dundee, Montrose, Arbroath.
Fife—Cupar, St. Andrews, Kirkcaldy, Dunfermline.
Kinross—Kinross.
Clackmannan—Clackmannan, Alloa.
Perth—Perth, Dunkeld, Crieff, Dunblane.
Stirling—Stirling, Falkirk, Kilsyth.
Dumbarton—Dumbarton, Helensburgh, Kirkintilloch.
Argyle—Inverary, Oban, Campbeltown, Dunoon.
Bute—Rothesay, Brodick, Millport.

In the neighbourhood of Stonehaven is *Dunottar Castle*, used as a State prison for the Covenanters. The University of *St. Andrews* is the oldest in Scotland. *Kirkcaldy* was the birthplace of Adam Smith (1723). *Dunfermline* contains the remains of a fine old abbey where the kings of Scotland were buried, from the end of the eleventh to the middle of the fourteenth century. Here the tomb and skeleton of Robert Bruce were discovered in 1818. *Alloa* is famous for its ales. *Perth*, an ancient city, was once the capital of Scotland. Here James I. of Scotland was murdered in 1437.

DUMBARTON CASTLE.

Scone, about two miles to the north of Perth, is noted for its abbey, where the kings of Scotland were formerly crowned. The coronation stone was removed to Westminster Abbey by Edward I., and is now enclosed in the coronation chair. *Dunkeld*, pleasantly situated amongst romantic scenery, is chiefly celebrated for remains of its ancient cathedral. *Dunblane*, on the banks of the Allan, has also the remains of a fine cathedral. Near this place was fought the battle of *Sheriffmuir* (1715). A little south of Dunblane, and partly in the county of Stirling, is the *Bridge of Allan*, the most fashionable inland watering place in Scotland. *Stirling*, with its ancient castle, is intimately associated with Scottish history. James II. was born in the castle, and in it he basely murdered Earl Douglas (1452). Several battles have been fought in this county: *Cambuskenneth*, or Stirling Bridge (1297); *Falkirk* (1298 and 1746); *Bannockburn* (1314); *Sauchie Burn*, about a mile from Bannockburn, (1488); and *Kilsyth* (1645). *Dumbarton*, at the confluence of the Leven and the Clyde, is famous for its ancient castle built on a rock 560 feet high. *Dunoon*, on the Firth of Clyde, is a fashionable sea-side resort. *Rothesay*, on the island of Bute, is celebrated for its mild climate, and is a favourite resort for invalids and sea-bathers. *Millport* is pleasantly situated on the Isle of Cumbrae.

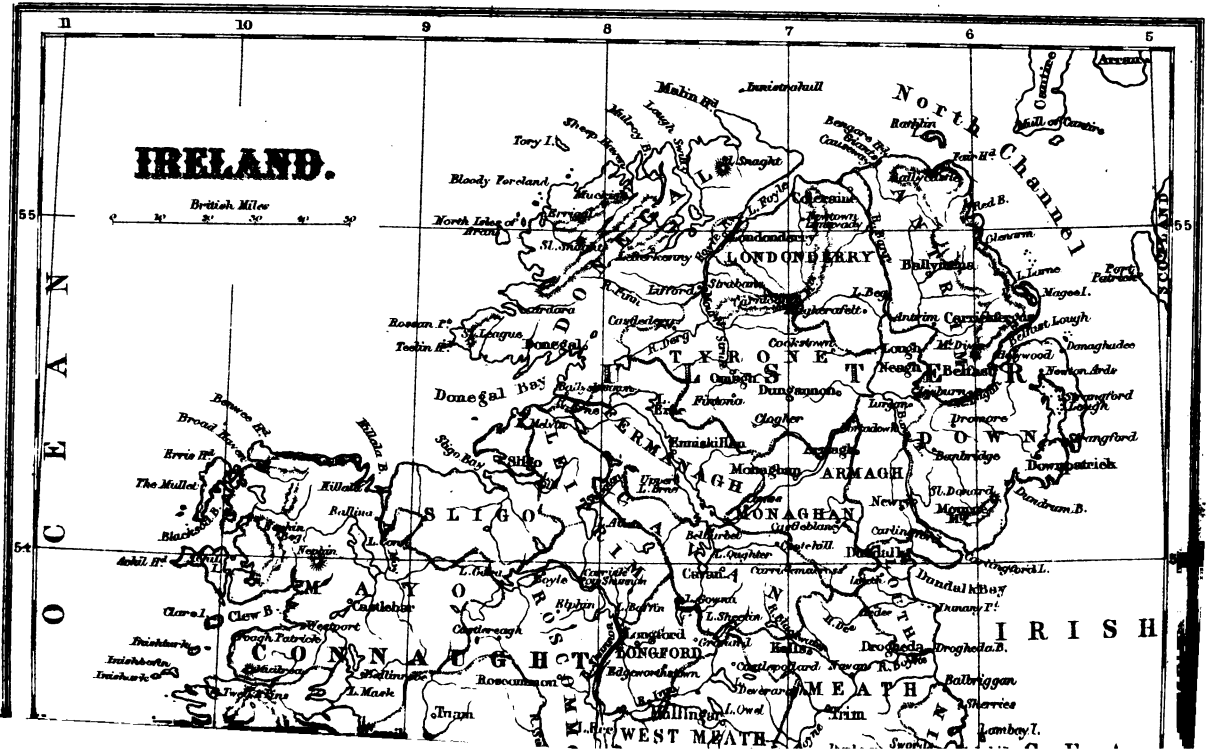
SOUTHERN COUNTIES.

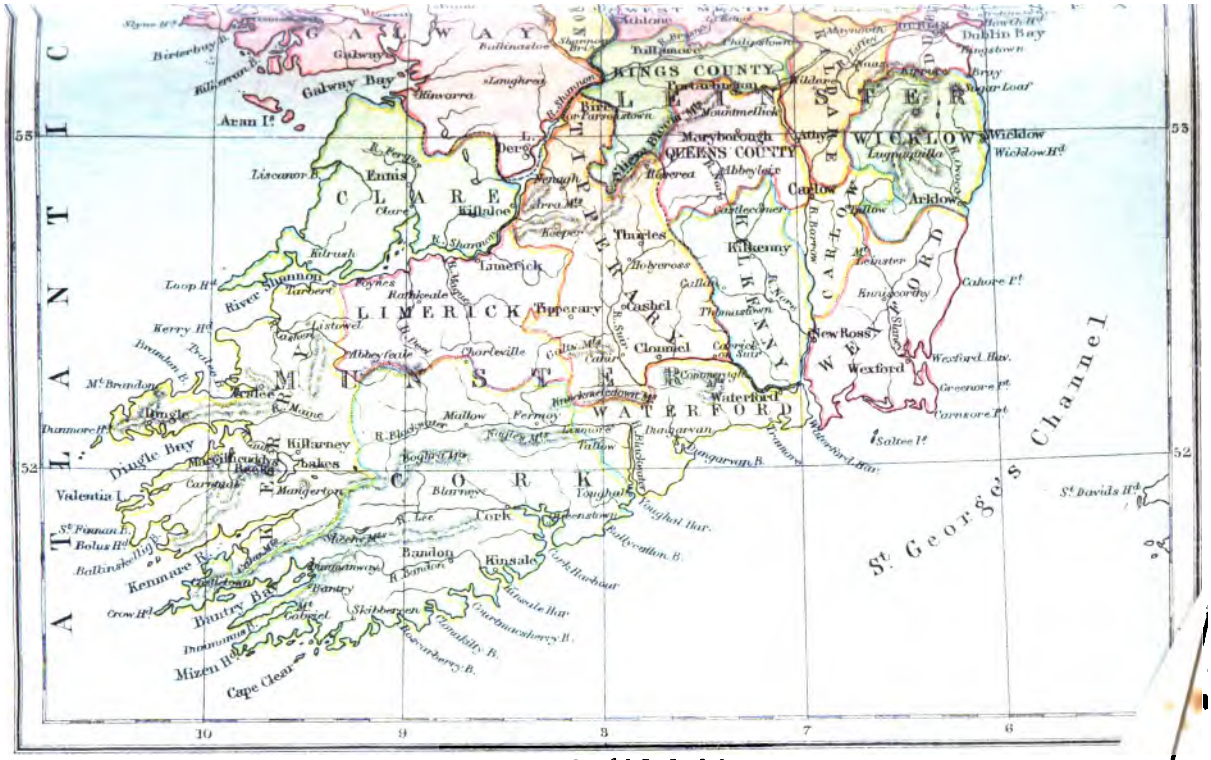
LINLITHGOW—Linlithgow, Queensferry, Bathgate.
EDINBURGH—Edinburgh, Leith, Portobello, Musselburgh.
HADDINGTON—Haddington, Dunbar, N. Berwick, Prestonpans.
BERWICK—Greenlaw, Dunse, Coldstream, Lauder.
ROXBURGH—Jedburgh, Hawick, Kelso, Melrose.
SELKIRK—Selkirk, Galashiels.
PEEBLES—Peebles, Inverleithen.
LANARK—Lanark, Glasgow, Hamilton, Airdrie, Rutherglen.
RENFREW—Renfrew, Greenock, Paisley, Port-Glasgow.
AYR—Ayr, Kilmarnock, Ardrossan, Irvine, Girvan, Largs.
WIGTON—Wigton, Stranraer, Port-Patrick.
KIRKCUDBRIGHT—Kirkcudbright, Castle Douglas, New Galloway.
DUMFRIES—Dumfries, Moffat, Annan, Gretna.

The counties of Haddington, Edinburgh, and Linlithgow are sometimes called *East Lothian*, *Mid-Lothian*, and *West Lothian* respectively. *Linlithgow* is one of the most ancient towns in Scotland; its palace, now in ruins, was the birthplace of Mary Queen of Scots. **Edinburgh**, the capital of Scotland, is an interesting and beautiful city. The old parts of the town are rich in historical associations, while the new part contains fine streets and handsome buildings. Among other places of interest are the Castle, Holyrood Palace, Scott's Monument, the house of John Knox, and the Old Tolbooth, or "Heart of Mid-Lothian." The population is nearly 200,000. *Leith* is the port of Edinburgh. *Portobello* is a favourite bathing-place. Near Musselburgh was fought the battle of *Pinkey* (1547). *Haddington* is noted for its large markets of agricultural produce; it was the birthplace of John Knox (1505). *Dunbar* has been the scene of two battles—the first, when John Baliol was defeated (1296); the second, when Cromwell defeated Lesley (1650). The battle of *Prestonpans* was fought in 1745. *Greenlaw* is the county town of Berwickshire. The town of Berwick was, by a treaty between England and Scotland, in 1551, declared independent of both countries; but by the Reform Bill of 1832 it was incorporated with Northumberland. *Kelso* was originally a suburb of the town of Roxburgh. In 1460, James II. took and demolished Roxburgh, but in besieging the castle he was killed by the bursting of a cannon. His queen, however, continued the siege, and in a few days it was obliged to surrender. It was then destroyed, and has since remained in ruins. Kelso is now a handsome town. About two miles to the north-east is *Ednam*, where Thomson, the poet, was born (1700). *Melrose* is chiefly famous for the ruins of its noble abbey, founded by David I., and rebuilt by Robert Bruce. Three miles to the west is *Abbotsford*, the residence of Sir Walter Scott; three miles to the east is *Dryburgh Abbey*, where he is buried. In remote times *Selkirk* was famous for its manufacture of shoes, hence the origin of the expression, "the Souters (shoemakers) of Selkirk," a term used as denoting the whole of the inhabitants.

EDINBURGH CASTLE.

Within a mile of the town Mungo Park was born (1771), and he practised for some time as a surgeon at *Peebles*. James Hogg, the poet, was born in the district called Ettrick Forest. Near the town of Selkirk was fought the battle of *Philiphaugh* (1645). *Inverleithen* is a popular watering place. *Lanark*, in the neighbourhood of the Falls of the Clyde, was the scene of the first military exploit of Wallace, when he killed the English sheriff and expelled his followers from the town (1297). About two miles from Hamilton is *Bothwell Bridge*, where the Covenanters were defeated by the Duke of Monmouth (1679). *Hamilton Palace*, the seat of the Duke of Hamilton, is a superb structure, and its collection of paintings is almost unrivalled. About two miles south of Renfrew is *Elderslie*, the birthplace of William Wallace (1276). James Watt, the inventor of the steam engine, was born at *Greenock* (1736). *Paisley* was the birthplace of Professor Wilson (1786). About two miles to the south of *Ayr*, on the banks of the Doon, Robert Burns was born (1759). *Ardrossan* is much resorted to for sea-bathing. *Largs*, further to the north, is also a favourite bathing place. Here Haco, king of Norway, was defeated by Alexander III. (1263). James Montgomery, the poet, was born at *Irvine* (1717). *Port-Patrick* is only 21 miles from Donaghadee, on the coast of Ireland. Near Kirkcudbright is *Dundrennan Abbey*, where Mary Queen of Scots spent her last night in Scotland. In the cathedral of *Dumfries*, Robert Bruce killed Red Comyn (1306). *Moffat*, a pleasant town, is noted for its mineral springs.


IRELAND.
British Miles
North Channel
OCEAN
IRISH
LONDONDERRY
TYRONE
ARMAGH
MONAGHAN
DOWN
SLIGO
LONGFORD
WEST MEATH
MEATH
Donegal Bay
Malin Hd.
Tory I.
Bloody Foreland
Sligo Bay
Killala B.
Clew B.
Achil Hd.
Erris Hd.
The Mullet
Londonderry
Coleraine
Ballymena
Lough Neagh
Cookstown
Omagh
Dungannon
Enniskillen
Monaghan
Armagh
Downpatrick
Dundalk Bay
Drogheda
Trim
Castlebar
Westport
Roscommon
Ballina
Cavan
Longford
Rathlin I.
Strangford Lough
Belfast Lough
SCOTLAND



ATLANTIC
GALWAY
Galway
Galway Bay
Aran I.
KINGS COUNTY
LEINSTER
QUEENS COUNTY
Maryborough
KILDARE
WICKLOW
Wicklow
Wicklow Hd.
Dublin Bay
Bray
Arklow
CARLOW
Carlow
KILKENNY
Kilkenny
WEXFORD
Wexford
New Ross
Wexford Har.
Carnsore Pt.
Saltee I.
CLARE
Ennis
Killaloe
Kilrush
L. Derg
River Shannon
Loop Hd.
Kerry Hd.
TIPPERARY
Thurles
Cashel
Tipperary
Clonmel
Nenagh
LIMERICK
Limerick
Abbeyfeale
Charleville
MUNSTER
WATERFORD
Waterford
Dungarvan
Waterford Har.
KERRY
Tralee
Killarney
Dingle
Dingle Bay
Valentia I.
Kenmare R.
Bantry Bay
Mizen Hd.
Cape Clear
CORK
Cork
Mallow
Fermoy
Youghal
Bandon
Kinsale
Skibbereen
St. George's Channel
St. Davids Hd.

William Collins, Sons & Co. London & Glasgow.

Pa
han
owe
Head
Nort
miles
and
Fair
miles
Head
Gree
are
Islan
The
Irel
of t
An
plac

IRELAND.

PHYSICAL CHARACTER.

Position and Extent.—Ireland is an island lying to the west of Great Britain, and is separated from it by the North Channel, the Irish Sea, and St. George's Channel. The narrowest part of St. George's Channel, between St. David's Head and the coast of Wexford, is about 47 miles wide. The Irish Sea is nowhere less than 55 miles in width; but, in the North Channel, the coast of Ireland approaches within 14 miles of the Mull of Cantire. On the north and west Ireland is washed by the Atlantic. Its extreme length from Fair Head, in Antrim, to Mizen Head, in Cork, is about 300 miles; its breadth from Howth Head, near Dublin, to Slyne Head, in Galway, is about 180 miles; and its total area is 32,512 square miles.

Ireland lies between the parallels of 51° 26′ and 55° 22′ north latitude, and between 5° 26′ and 10° 29′ west longitude. Owing to difference of longitude there is a difference of 36 minutes in solar time between Greenwich and Galway.

Coast-Line.—Ireland is more compact in shape than Great Britain, and, except on the west coast, the indentions are neither large nor numerous; yet there is no part of the island more than 55 miles from the sea, or some arm of it. The total length of the coast-line is about 2000 miles.

Commencing at **Malin Head**, the most northerly point in Ireland, we find that the shore runs south-east to the estuary of the Foyle. Proceeding eastward we reach the shores of Antrim, which are bold and precipitous, consisting in many places of basaltic columns. A fine example of this columnar arrangement is seen in the Giant's Causeway.

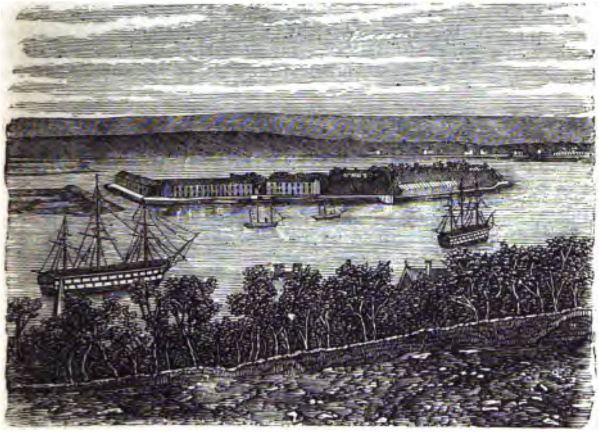
The **Giant's Causeway** resembles in structure, and doubtless also in origin, the basaltic rocks which are seen in the island of Staffa. It consists of an assemblage of pillars arranged in three piers or causeways, the longest of which runs about 1000 feet into the sea. The pillars have from three to nine sides, but the greater number have either five or six; and they range in height from 40 to 55 feet, with a diameter of from 15 to 30 inches. Similar columns exist at Fair Head and Bengore Head. Indeed, the whole surface of Antrim is of volcanic origin.

Passing Bengore Head we reach **Fair Head,** a bold mass of rock with cliffs 600 feet in height. Off the coast is the island of **Rathlin,** where Robert Bruce for a time found shelter. The east coast of Ireland is upon the whole low and flat, and lined with sand banks and sunken rocks; and there

BASALTIC COLUMNS, GIANT'S CAUSEWAY.

is scarcely a single good harbour: Strangford Lough is the best. From Fair Head the coast runs for some distance to the south-east, and we pass Belfast Lough. **Strangford Lough,** a little farther south, is entered by a narrow channel about 6 miles long; it then expands into a large basin extending north for about 15 miles. The coast now sweeps round past **Dundrum Bay** and **Carlingford Lough** to Dundalk Bay. It then runs southward, with a slight curve, to Carnsore Point. Proceeding south from **Dundalk Bay** we pass a small island called **Ireland's Eye**. The island is only about a mile and a quarter in circuit, but as it rises to a considerable height, it is a conspicuous object from the coast. It contains the ruins of an abbey, and has a martello tower and a lighthouse. Now, rounding **Howth Head,** we enter **Dublin Bay**. This is only an indifferent harbour, as it is exposed to the east winds, and there is a sand bar at the entrance; large vessels therefore unload at Kingston. Leaving Dublin we pass **Wicklow Head** and Wexford Harbour, and reach **Carnsore Point**. About 7 miles to the north-east is **Tuscar Rock**, on which a lighthouse, modelled after that at Eddystone, has been constructed.

The south coast is bolder than the east and more indented, and there are some good harbours. From Carnsore Point the coast runs westward as far as Dungarvon Bay. **Waterford Harbour** is a deep and spacious inlet; but **Tramore Bay**, which, in foggy weather, is sometimes mistaken for it, is one of the most dangerous places on the Irish coast; there is always a strong current and no anchorage. The coast runs south-west from **Dungarvon Bay** as far as Mizen Head. Passing **Youghal Harbour**, into which the Blackwater flows, we reach Cork Harbour.



CORK HARBOUR.

Cork Harbour is one of the finest, if not *the* finest, in the British Islands. The entrance is by a deep channel, 2 miles long and a mile wide, defended on each side by forts. Within, the harbour spreads out into a magnificent basin, containing several islands, the largest of which is Great Island, on which stands Queenstown, the outport of Cork.

Leaving Cork Harbour, and passing **Kinsale Harbour** and **Cape Clear**, which stands on an island, we come to **Mizen Head**, the most southerly point in Ireland. The west coast, as in Scotland, is bold and rocky, and deeply indented. **Bantry Bay** is a fine inlet, the entrance to which lies between two headlands, known respectively as the **Crow's**

Head and the **Sheep's Head.** Passing **Kenmare River,** we reach Valentia Island at the entrance of Dingle Bay.

Valentia Island is the terminus of the four telegraphic cables which cross the Atlantic; the other terminus is at Trinity Bay in Newfoundland. The harbour, formed by the channels between Valentia Island and the mainland, is deep and capacious.

Passing **Dingle Bay,** a large shallow expanse of water, and **Dunmore Head,** the most westerly point in Ireland, we reach the estuary of the Shannon. This is a large and safe harbour, and the entrance lies between **Kerry Head** and **Loop Head.** The coast now trends to the north-east, and we reach **Galway Bay,** protected by the **Arran Isles,** which extend about a dozen miles across its mouth, forming a natural breakwater.

The principal island in the group is **Arranmore,** which is about 8 miles long and 3 broad. The islands are inhabited, and the people are chiefly engaged in agriculture and fishing. The north-east coasts of the islands slope down to a shingly beach, but on the south and west there are bold dark cliffs abounding with sea-fowl. Antiquities of various kinds are met with on the islands, and Arranmore is said at one time to have possessed ten churches.

Following the coast of Galway, and rounding **Slyne Head,** we next come to **Clare Island** at the entrance of **Clew Bay.** To the north of this is Achil Island.

Achil or **Eagle Island,** so called from its being the resort of the eagle, is separated from the mainland by a narrow channel which is fordable at low water. It is the largest island on the Irish coast, and has a circumference of about 30 miles. It is very mountainous, and **Achil Head,** on the west coast, rises 2200 feet above the sea. The inhabitants, about 5000 in number, are chiefly engaged in fishing, and live in miserable hovels.

To the north of Achil Island the coast is very rugged and broken, and we meet with a curious shaped peninsula called the **Mullet,** which terminates on the north in **Erris Head.** On either side of the isthmus, which connects the Mullet with the mainland, are **Blacksod Bay** and **Broadhaven.** The coast now runs westward to **Sligo Bay,** to the north of which is **Donegal Bay.** Donegal is the most mountainous county in Ireland; and its coast, as might be expected, is bold and rugged. This is especially the case in the south-western part of the county in the peninsula which terminates in **Rossan Point.** Here for several miles the shore is lined with stupendous cliffs, which rise in some places to the height of 2000 feet. Passing now the **North Isles of Arran,** and **Tory Island,** we come to **Lough Swilly,** a fine sheet of water which stretches inland for about 25 miles.

Surface.—Ireland is upon the whole a flat country, though there are some tracts of considerable elevation in the north, west, and south. The mountain systems generally lie round the coast, leaving a large plain in the interior. The only range of any importance in the interior is that known as the Silver Mine and Slieve Bloom Mountains. The chief mountain systems, commencing in the north and going round by the west, are the Mourne Mountains, the mountains of Antrim, the mountains of Donegal, the Nephin Beg Mountains, the mountains of Connemara, the Galtee and Knockmeledown Mountains, and the mountains of Wicklow.

TWELVE PINS, CONNEMARA.

The **Mourne** Mountains are in the county of Down, and run close to the shore between Dundrum Bay and Carlingford Lough. The chief summit is **Slieve Donard,** above 2800 feet in height. The mountains of Antrim form an extensive plateau, with summits here and there rising 1700 or 1800 feet high. In Donegal the mountains consist of several parallel ranges, which generally run north-east and south-west. Several summits exceed 2000 feet; **Mount Errigal,** the culminating point, has an elevation of 2460 feet. The mountains of Donegal are continued eastward, in Tyrone and Londonderry, under the names of **Sperrin** Mountains and **Carntogher** Mountains. In the **Nephin Beg** range, the highest summit is about 2370 feet, but Mount Nephin, which lies to the eastward of the range, is nearly 300 feet higher. The mountains of **Connemara,** under which name are included all the groups which lie between Clew Bay and Galway Bay, are remarkable for their romantic and picturesque scenery. The highest summit is **Muilrea** (2680 feet). **Croagh Patrick,** which lies to the north, is connected with the history of the saint, and pilgrimages are sometimes made to the summit.

The mountains of Kerry form several parallel ranges which run through that county, and into the adjacent county of Cork. **Macgillicuddy's Reeks**, the highest range, contains the summit of **Carran Tual**, which has an elevation of 3404 feet, and is the highest summit in Ireland. **Mount Brandon**, whith rises from another range which runs through the peninsula between Tralee Bay and Dingle Bay, has an elevation of 3210 feet, and is the second summit in Ireland. The **Galtee** Mountains in Tipperary, and the **Knockmeledown** Mountains, between Tipperary and Waterford, may be looked upon as spurs from the Kerry system. The Wicklow Mountains are celebrated for their picturesque scenery. The summit of **Lugnaquilla**, which reaches 3039 feet, is the third in height among the Irish mountains. The **Slieve Bloom** Mountains run between King's County and Queen's County; they are continued south-west into Tipperary under the name of **Silver Mine** Mountains, and here **Mount Keeper**, the culminating point in the range, reaches a height of 2200 feet.

The greater portion of the interior of Ireland is embraced in the *Great Central Plain*, which extends from Dublin to Galway Bay, and from Lough Neagh to the county of Waterford. In no part, except towards the south, does this plain rise more than 320 feet above the sea, and a great portion of it is covered with bog-land.

These bogs or peat mosses form a striking feature in the geography of Ireland. They bear no resemblance to the fens of England, as they lie in all cases above the sea-level, and sometimes have an elevation of even 2000 feet. They are divided into *red* and *black* bogs. The former, which are found for the most part in the great central plain, produce abundance of peat, and are capable of being reclaimed. The black bogs are generally found in mountainous districts, and in Donegal there is a bog completely diversified with hill and dale. The origin of these bogs is very obscure; they rest generally upon a stratum of clay based on limestone, and it is the clay doubtless which keeps the water from being absorbed. About two-fifths of the whole surface of Ireland is bog-land. Six-sevenths of the red bogs would be included between two lines, one drawn from Howth Head to Sligo, the other from Wicklow Head to Galway; and of the bog-land thus included, more than two-thirds lie west of the Shannon. The various morasses enclosed in the Great Central Plain are included under the general name of the *Bog of Allen*.

MINERALS.—The **coal-fields** of Ireland are few and unimportant. The principal one is in the county of Kilkenny, where the coal is of the kind called *anthracite*. It burns without flame or smoke, and gives a great heat; but its sulphurous smell is unpleasant. There is a still larger coal-field in the south-west which occupies an extensive tract in the counties of Clare, Limerick, Kerry, and Cork; but the coal is of inferior quality, and is chiefly used for malting and the burning of lime. The best for domestic purposes is found in the neighbourhood of Dungannon, in Tyrone. Peat, however, is the fuel almost exclusively used by the labouring classes, and towns are supplied chiefly with coals imported from

England and Scotland. **Iron ore** is diffused pretty widely, especially in the neighbourhood of Lough Allen, in Leitrim, but the scarcity of coal prevents it being worked. Copper, lead, and silver are found in Cork, Kerry, and Wicklow, and in the latter county small quantities of gold have been found. The **copper** is sent to Swansea to be smelted. **Granite** is abundant in Wicklow, Donegal, and Galway; beautiful statuary **marble** is also found in Galway and Donegal, and the black and grey marbles of Kilkenny are exported to a considerable extent.

RIVERS.—The rivers of Ireland resemble those of England rather than those of Scotland; for, flowing for the most part through level districts, their currents are slow, and their courses are seldom interrupted by waterfalls. The principal rivers, commencing with the Shannon and going round by the north, are the Shannon, Erne, Foyle, Bann, Boyne, Liffey, Barrow, Suir, Blackwater, Lee, and Bandon.

The **Shannon** rises in the county of Cavan, about 350 feet above the sea-level, and shortly afterwards expands into *Lough Allen*. Leaving that lake, and flowing to the south, it is joined on the right bank, at Carrick, by a stream which brings with it the waters of *Lough Gara*. It then expands into *Lough Baffin*, and further south into *Lough Ree*, a large irregular sheet of water about 17 miles in length. Issuing from Lough Ree the river passes Athlone, a large military station, and below Shannon Bridge it is joined on the right hand by the Suck. This stream rises in Roscommon, and forms for some distance the boundary between that county and Galway. The Shannon next receives the Brusna, on the left bank; and then turning to the south-west, expands into *Lough Derg*. The river now flows past Killaloe and Limerick, and then expands into a large estuary, into which flow the Mague, Deel, and Cashen, on the south; and the Fergus on the north side. The total length of the Shannon is about 224 m.

Basin.—The boundaries of the basin of the Shannon are not well defined, since it drains a very flat district; but the area includes the counties of Leitrim, Longford, Westmeath, Roscommon, and Limerick; and a portion of the counties of Cavan, King's County, Queen's County, Tipperary, Clare, and Galway. The total area of the basin is nearly 7000 square miles. The Shannon has sometimes been compared to the Severn. Both rivers are about the same in length, and they flow in a similar direction; and both expand into large estuaries. The commercial importance of the river is considerably increased through its connection with the Grand and Royal Canals.

The **Erne** has its source in *Lough Gowna*. It then flows northward, and, after passing through *Lough Oughter*, enters the *Upper Lough Erne*. This lake is connected with the lower and larger lake by a narrow channel, in the middle of which is an island on which stands the town of Enniskillen. Both the lakes are very beautiful, and are full of islands, many of which are thickly wooded, and some inhabited. The stream issues from the lower lake, and after a course of about 9 miles, during which it forms many rapids, it precipitates its waters over a fine cascade into the sea, at Ballyshannon. The length of the Erne is about 80 miles.

Basin.—The Erne drains a portion of the county of Cavan and the whole of Fermanagh; its outlet is in Donegal, but only a very small portion of that county belongs to its drainage. The area of the whole basin is 1660 square miles. Upper Lough Erne is connected by canals with the Shannon and the Blackwater; the latter flows into Lough Neagh.

The **Foyle** is formed by several streams which drain the county of Tyrone. One of these, the *Derg*, issues from a small lake of the same name, which is regarded by the Irish peasantry as a place of great sanctity. Upon a small island in the lake is a cave connected in some way with the history of St. Patrick, and crowds of pilgrims from all parts of the county visit it. Passing Lifford and Strabane the river flows on to Londonderry, below which it expands into Lough Foyle. This lough is about 16 miles long, and 9 or 10 wide, but it contains many shoals, and navigation is rather difficult.

Basin.—The river Foyle drains almost the whole of the county of Tyrone, and small portions of Donegal and Londonderry. Exclusive of the country drained by streams which flow into the loch, the total area of the basin is 1090 square miles.

The **Bann** rises in the Mourne Mountains, and passing Banbridge and Portadown, enters Lough Neagh at Banfoot Ferry. *Lough Neagh* is the largest lake in the British Islands, but its scenery is tame and uninteresting. Its shores are low, and in some places swampy; its water is shallow, and it is almost destitute of islands. It receives several streams, besides the Upper Bann, the chief of which is the Blackwater, which enters at its south-western corner. Its only outlet is the Lower Bann, which flows into the sea about 5 miles below Coleraine. Below the lake the current is rapid, and in some places the water is precipitated over ledges of rock; hence the Bann is not navigable above Coleraine. The length of the Bann, from its source in the Mourne Mountains, is about 100 miles.

Basin.—The basin of the Bann, if we include the area drained by the streams which flow into Lough Neagh, is nearly 3000 square miles. Commencing at the mouth of the Bann the line of watershed runs in a general direction to the south-west, as far as the source of the Blackwater. From this point a line running south-east to the source of the Callan, upon which Armagh stands, separates the basins of the Bann and Erne. The line of watershed now runs north to the source of the Newry, and then again turns south to the source of the Upper Bann, in the Mourne Mountains. The boundary of the basin then turns north to Lurgan, and then runs in a curve, so as to include the greater portion of Antrim, round to the mouth of the Bann, below Coleraine.

The **Boyne** rises in the county of Kildare at an elevation of about 220 feet, and flowing northward past Trim, is joined at Navan by the Blackwater. The stream has its source in Cavan, and flows through a small lake called Lough Ramor. After receiving the Blackwater, the Boyne flows to the north-east, and pours its waters into the sea about 2 miles below Drogheda. Its length is about 63 miles. The **Liffey** rises in the Wicklow Mountains, and flowing through the counties of Kildare and Dublin, empties itself into Dublin Bay, after a course of about 60 miles. The **Slaney** also rises in the Wicklow Mountains, and flowing south past Enniscorthy, empties itself into Wexford harbour. It is about the same length as the Liffey.

The **Barrow** rises at the northern extremity of the Slieve Bloom Mountains, and at first flows eastward past Port Arlington. Then turning to the south it flows for a considerable distance almost in a straight line, and passes the towns of Athy and Carlow. At New Ross it is joined by the **Nore**, which rises in the Slieve Bloom range, and flows south-east past Kilkenny. Below New Ross the Barrow flows into Waterford harbour, and completes a course of about 100 miles. The **Suir** also rises in the

Slieve Bloom Mountains, and at first flows south through Tipperary. Its course being deflected by mountains, it next turns eastward, passing Clonmel and Carrick-on-Suir. It then expands into an estuary, on which stands the town of Waterford, and mingles its waters with those of the Barrow. The two rivers are of about the same length.

Basin.—The basin of the Barrow, including the Nore and Suir, has a total area of 3500 square miles. An almost straight line, starting in the northern part of Kildare and running southward to Hook Head, separates this basin from those of the Liffey and Slaney. Returning to the north of Kildare, the northern part of the basin is separated from that of the Boyne by a straight line running east and west. A line running south-west, along the ridge of the Slieve Bloom and Silver Mine Mountains, and continued to the borders of the county of Cork, separates the basins of the Barrow and Shannon. The line then runs eastward, along the crest of the Knockmeledown Mountains, and terminates on the shores of Waterford Harbour.

The **Blackwater** rises on the borders of Kerry, and at first flows almost due east, passing Mallow, Fermoy, and Lismore; turning at right angles to its former course, it empties itself into Youghal harbour, after a course of about 80 miles. The course of the **Lee** is parallel with that of the Blackwater, and after a course of about 50 miles, it flows into Cork harbour. The **Bandon**, a much smaller stream, empties itself into Kinsale harbour.

Basin.—The Blackwater, Lee, and Bandon, drain the county of Cork, and the three basins together have an area of about 2000 square miles.

LAKES.—The lakes of Ireland are far more numerous than those of England, but a great many are small and uninteresting. Several have been mentioned in connection with the rivers; of the rest, the chief are the Lakes of Killarney, and Loughs Corrib, Mask, and Conn.

The **Lakes of Killarney**, so celebrated for their picturesque scenery, lie embosomed in the Kerry Mountains, and are three in number. The lower lake, which is the largest, is about 5 miles long, and contains above thirty islands. The western shore is skirted with mountains 2000 feet high, and clothed with forest trees almost to their summits. On the eastern side is a rich and well cultivated plain. The middle lake, the smallest of the three, is connected to the upper lake by a channel 3 miles in length. The upper lake is surrounded by some of the loftiest summits in Ireland, and the scenery is grand and sublime. The lakes are drained by a stream called the *Laune*, which flows into Dingle Bay. **Lough Corrib** is said to resemble Lough Erne in some respects. It is about 24 miles long, and 14 miles wide in some places, but it is contracted in the middle to a narrow channel. The country on the south and west is wild, mountainous, and rugged. Its surplus waters are discharged by a stream called the Corrib, which is about 5 miles in length. **Lough Mask** lies about 3 miles north of the former lake, and is said to be connected with it by a subterranean channel. **Lough Conn** is in the county of Mayo, and is drained by the *Moy*, which flows into Killala Bay.

CLIMATE AND PRODUCTIONS. — The climate of Ireland differs from that of England in being more humid and more equable. Frosts are not so severe, nor does snow lie so long on the ground as in England; and the western coasts are warmer than in similar latitudes in Great Britain. But while the winters are more mild, the summers are not so hot as in

England; and thus while some delicate plants will flourish in the open air, which in this country can only be reared in sheltered gardens, the heat is sometimes not sufficient to bring peaches and other fruits to perfection, or even to ripen wheat.

The mildness and humidity of the climate is due to the insular position of the country. Being entirely surrounded by water, its temperature is more equable than that of England. The prevailing winds are from the west and south, and Ireland is also more within the influence of the Gulf Stream than England is. Besides this, as Ireland lies to the west of Great Britain, the westerly winds which sweep across the Atlantic are drained of a great part of their moisture before they reach our shores. The average annual quantity of rain which falls in Ireland has been estimated at 36 inches, while in Great Britain it would not reach 30 inches. Ireland has a greater number of wet days than any country in Europe. Upon the average, rain falls about 208 days in the year.

It is to the moist character of its climate that Ireland owes its verdant appearance, which has earned for it the title of the "Emerald Island." From the same cause, also, the trees in that country often retain their foliage long after they have lost it in England. Ireland, however, is not well wooded. Forests are said to have been abundant at one time, and the remains of ancient vegetation, including large trunks of trees, are often met with in its extensive bogs; but timber is now very scarce. It is said that the old forests were cut down in the seventeenth century, in order to supply fuel for the iron-works which were then numerous in the country. The fuel at length failed; there was no coal, as in England, to take the place of the timber, and the works ceased. The vegetation of the south-west of Ireland is said to bear a certain resemblance to that of Spain. The arbutus, a beautiful evergreen, flourishes in the neighbourhood of the Lakes of Killarney, and the broad-leafed myrtle grows luxuriantly in the south and south-west.

The animals of Ireland resemble those of Great Britain with one or two remarkable exceptions. The squirrel, mole, dormouse, and some other small quadrupeds are not found in that country, and only five species of reptiles are met with—a lizard, a toad, a frog, and two species of newts.

It is supposed by geologists that the British Islands were at one period of time united with the Continent, and that the various wild animals of Great Britain and Ireland migrated from Germany. If this were so, it is probable that Ireland was separated from Britain before the migration was complete. The elk formerly lived in Ireland, and its bones have been discovered in various localities; and wolves are said to have inhabited the island as recently as the beginning of the eighteenth century. The surrounding seas swarm with fish, but the fisheries are not in a flourishing state.

POLITICAL FACTS.

PEOPLE.—Ireland was probably peopled from Britain, and the bulk of the inhabitants at the present day are of Celtic origin. In the large towns, however, they have become partially mixed with the descendants of English colonists; and in the eastern part of Ulster the population is almost wholly of Scotch origin. After the rebellion of O'Neil had been put down, towards the close of Queen Elizabeth's reign, the greater part of Ulster was forfeited to the crown, and James I. took the opportunity of introducing settlers from England and Scotland, but especially from the latter country. Ulster is now the best cultivated part of the country, and the inhabitants are frugal and industrious.

As among most Celtic nations, the Roman Catholic form of religion is that most generally followed in Ireland; in Ulster, however, Presbyterianism prevails. The Protestant Episcopal Church was disestablished in 1869, but it still remains a numerous and active body. There is now no established Church in Ireland.

There are two universities in Ireland: Dublin University, connected with the Protestant Episcopal Church; and Queen's University. The latter consists of three colleges at Belfast, Cork, and Galway, respectively. They afford to the middle and upper classes the means of obtaining a secular education without reference to religious belief. Elementary education is promoted by a body of schools placed under the direction of a Board of National Education. The schools are aided by government, and the teachers are zealous in their work, but their remuneration is scandalously low. Recently, however, some improvement has taken place in this respect. The English language is now prevalent throughout the island, but the Celtic dialect is still spoken by the peasantry in the south and west, though it is gradually becoming extinct.

The population of Ireland in 1871 was 5,402,759. Twenty years ago the population exceeded eight millions; but since that time it has gradually decreased owing chiefly to emigration. Nor is this to be regretted; Ireland is chiefly an agricultural country, and is not, therefore, able to support such a dense population as countries where manufactures are carried on to a greater extent. The average for the whole island is about 170 to a square mile; while in England and Wales it is 389. The southern and western parts of Ireland are the most thinly inhabited.

The chief industrial occupations of the people are agriculture, fisheries, manufactures, and commerce.

AGRICULTURE.—The want of coal prevents Ireland from becoming a great manufacturing country; while the soil and climate are favourable to agriculture, especially to grazing and dairy farming. The soil is naturally of great fertility, but the science of agriculture has not made such progress here as in Great Britain. One great drawback, which for a long time existed, was the number of small holdings, sometimes the smallest patches on which a family could manage to exist. The crop generally raised was the potato, but the fearful famine which ensued upon the failure of this crop in 1846, taught the peasantry the danger of relying upon one source of food. Another drawback to the progress of agriculture has been the insecurity of property. The country has been unsettled for so long a time that men of enterprise and capital had no encouragement to develop the natural resources of the country. Some improvement has taken place, however, in these respects within recent years. The potato still continues to be the staple product, but oats also are grown to a great extent. Flax and hemp are cultivated in the province of Ulster, but only in small quantities, and the cultivation of beetroot has been attended with considerable success.

Ireland is well adapted for pasture, owing to the humidity of its climate, and even its mountains are covered with a rich verdure. Large numbers of cattle are reared, especially in the counties of Limerick, Tipperary, and Roscommon. Sheep are raised in the same counties, and in Galway and Clare. Ballinasloe, in Galway, is famous for its cattle and sheep markets. Goats are very common in mountainous districts; and hogs are found everywhere. Large quantities of butter and other dairy produce are exported to England.

FISHERIES.—The seas which surround the coasts of Ireland swarm with cod, herring, ling, hake, and other fish; and there are extensive oyster beds on the coast of Clare, and in Lough Swilly. Seals are often met with on the south-western shores. But the fisheries of Ireland are not in a flourishing state. Large quantities of salmon, however, are sent to Liverpool, Bristol, and London, which compete successfully with the produce of the Scottish rivers. The chief salmon fisheries in Ireland are in the Bann, the Foyle, and the Boyne.

MANUFACTURES.—These are chiefly the making of linen, woollen, and cotton fabrics, with the distillation of whiskey.

The **linen** manufacture was introduced into Ireland by James I., and it is the staple manufacture of the country. It is carried on principally in Ulster—Belfast, Armagh, and

Drogheda being the chief centres. A great deal of linen is manufactured also by cottagers who grow their own flax, spin it into yarn, and then weave it with the hand-loom. Flax and hemp are not grown, however, in sufficient quantities to supply the large manufactories, and they are imported from the continent. The **woollen** manufacture is chiefly confined to the coarser kind of goods. The chief towns engaged in this branch are Dublin, Wicklow, and Kilkenny. A coarse kind of frieze is made by the farming population in most parts of the country during the intervals of agricultural labour. The **cotton** manufacture is carried on to some extent at Belfast and the vicinity, at Tullamore, in King's County, and in some parts of the south.

The **silk** manufacture was introduced into Dublin by French refugees but it never took deep root. The manufacture of *tabinet*, or Irish poplin, a mixture of silk and woollen is still carried on, however, at the capital. The distillation of **whiskey** is pursued in various parts of the country, but not to such a great extent as formerly, owing to a spread of more temperate habits among the people. **Porter** is largely made in Dublin, and exported to Great Britain and other countries. **Shipbuilding** is carried on at Cork, Belfast, and other places.

INTERNAL COMMUNICATION.—The roads are in general kept in good repair. There are two fine canals constructed at the expense of the government: the **Royal Canal**, which runs from Dublin, through Maynooth and Mullingar, to Tarmonbarry on the Shannon; and the **Grand Canal**, which proceeds from Dublin, through Tullamore, to Shannon harbour, and is thence continued to Ballinasloe. A branch of this canal runs to Athy, where the Barrow is navigable for small craft. Besides these there are the **Ulster Canal**, which connects Lough Neagh with Upper Lough Erne; and the **Newry Canal**, which connects the Upper Bann with Carlingford Lough.

There are six main lines of railway: (1) the **Dublin, Wicklow, and Wexford** line; (2) the **Great Southern and Western**, which runs from Dublin, through Kildare, Maryborough, Thurles, and Mallow, to Cork, with branches to Limerick, Killarney, Fermoy, Youghal, and other places; (3) the **Midland**, which proceeds from Dublin, through Maynooth, Mullingar, Athlone, and Ballinasloe to Galway; (4) the **Dublin and Belfast Junction**; (5) the **Irish North-Western**, from Dundalk, Enniskillen, and Omagh to Londonderry; and (6) the **Belfast** and **Northern Counties**, which runs from Belfast to Londonderry by way of Antrim, Ballymena, and Coleraine.

COMMERCE.—The foreign trade of Ireland is inconsiderable, but there is a large cross-channel trade carried on with Great Britain. The chief imports from abroad are colonial produce, wine, timber, flax, hemp, and wool. Coal and manufactured goods are imported from England and Scotland. The chief exports are cattle, pigs, dairy produce, salmon, and linen. Dublin is the chief seat of the foreign trade, and Waterford of the cross-channel trade. The other chief ports are Belfast, Cork, Londonderry, Limerick, Drogheda, Dundalk, Wexford, and Galway.

CUSTOM-HOUSE, DUBLIN.

Dublin, the capital of Ireland, stands at the mouth of the Liffey. The city is very beautiful, and St. Stephen's Square is one of the finest in the empire. Its manufactures of poplins are not so great as formerly, but it has numerous breweries and distilleries. Being the centre of the railway system, and the terminus of the two great canals, it has considerable trade; and as a port ranks next to Belfast. As the harbour is not a very good one, large vessels generally unload at Kingston, whence there is rail to Dublin. The population is about 250,000.

Belfast is the second city in Ireland for size and wealth, and the first for trade and manufactures. It is the chief centre of the linen manufacture, and cotton weaving and shipbuilding are also important branches of industry. There is considerable foreign trade, but the most important branch of its commerce is the trade with England and Scotland. By the aid of a canal the town has water communication with Lough Neagh. The population is about 175,000.

Cork, at the mouth of the river Lee, is the third town in Ireland. It has some manufactures of woollen, linen, and cotton; and shipbuilding is carried on to a considerable extent. Provisions and other agricultural produce are largely exported. Below Cork the Lee expands into a magnificent harbour, capable of holding the entire navy of England. In the centre of this basin is Great Island, on which stands **Queenstown**, where vessels generally call on their way to or from America. The population of Cork is about 78,000.

Limerick is the chief outlet for the counties drained by the Shannon, and has considerable trade. The chief exports are corn and other agricultural produce; and the imports are timber, iron, and colonial produce principally. The manufacture of lace is carried on to a considerable extent. The population is about 40,000.

Londonderry stands on both sides of the river Foyle, which is crossed by a splendid iron bridge. It carries on the manufacture of linen to some extent, and has considerable trade with Liverpool and Glasgow. Its population is about 20,000.

Waterford, being the great outlet for the district drained by the Barrow, Nore, and Suir, exports a great quantity of agricultural produce. Its population is about 23,000. **Drogheda**, at the mouth of the Boyne, has several cotton, flax, and corn mills, iron foundries, salt works, soap works, tanneries, and breweries. It carries on a considerable trade with Liverpool, and exports large quantities of agricultural produce and linen. The population is about 15,000. **Dundalk**, about twenty miles north-west of Drogheda, has a good harbour, and exports timber, slates, and all kinds of agricultural produce. **Wexford**, at the mouth of the Slaney, is the outlet for a rich agricultural district: it has steam communication with Liverpool.

Galway is an ancient town, and in former times had an extensive commercial intercourse with Spain, and in the older part of the town the houses are built in the Spanish fashion. The harbour is capacious but shallow. Its present trade consists almost exclusively in the export of agricultural produce, fish, kelp, and marble. The native black marble is very beautiful, and it is sawn and polished at mills in the town. The salmon fishery is valuable. The population is about 16,000.

COUNTIES.—Ireland is divided into four provinces: Ulster in the north, Leinster in the east, Munster in the south, and Connaught in the west. Before the conquest by England, in the reign of Henry II., each of these provinces was a separate kingdom; but it had been usual for the prince of one or other of these sovereignties to be looked upon as the monarch of Ireland. The provinces are subdivided into thirty-two counties.

ULSTER.

ANTRIM—Belfast, Carrickfergus, Ballymena, Antrim.
LONDONDERRY—Londonderry, Coleraine.
DONEGAL—Lifford, Ballyshannon, Donegal.
TYRONE—Omagh, Strabane, Dungannon.
FERMANAGH—Enniskillen.
CAVAN—Cavan, Cootehill, Belturbet.
MONAGHAN—Monaghan, Clones, Carrickmacross.
ARMAGH—Armagh, Lurgan, Portadown.
DOWN—Downpatrick, Newry, Newtownards, Donaghadee.

Londonderry is celebrated for its siege, which lasted from December 1688 to August 1689. *Lifford* is said to be the smallest county town in the British Islands; its population is about 600. *Dungannon* was the ancient residence of the kings of Ulster. *Enniskillen* is pleasantly situated on an island in the river which connects Upper Lough Erne with the lower lake, and is connected with the land by bridges on either side. In the vicinity of *Belturbet* are extensive linen manufactories. *Downpatrick* is celebrated as the place of St. Patrick's interment. The word *Carrick*, which occurs so frequently in the names of places in Ireland, means a castle or tower; *Bally*, a town or village; *Ennis*, or *Innis*, an island.

LEINSTER.

LOUTH—Dundalk, Drogheda, Carlingford.
MEATH—Trim, Navan, Kells.
WESTMEATH—Mullingar, Athlone.
LONGFORD—Longford, Granard, Edgeworthstown.
DUBLIN—Dublin, Kingstown, Balbriggan.
KILDARE—Athy, Kildare, Naas, Maynooth.
KING'S COUNTY—Tullamore, Parsonstown, Philipstown.
QUEEN'S COUNTY—Maryborough, Mountmellick, Port Arlington.
KILKENNY—Kilkenny, Callan.
CARLOW—Carlow, Tullow.
WICKLOW—Wicklow, Arklow, Bray.
WEXFORD—Wexford, New Ross, Enniscorthy.

In 1649, Cromwell took the towns of *Drogheda* and *Wexford* by assault, and with great cruelty put both garrisons to the sword. The battle of the Boyne was fought in the neighbourhood of Drogheda (1690). Three miles south of Trim is *Dangan Castle*, the birthplace of the Duke of Wellington (1769). *Mullingar*, on the Royal Canal, is noted for its great cattle and wool markets. *Athlone* is one of the chief military stations in Ireland. *Edgeworthstown* was the residence of Miss Edgeworth, the distinguished writer. *Kildare* is noted for the *Curragh* or common in the neighbourhood, the finest racecourse in Europe. It contains about 5000 acres, and is said to be unrivalled for the softness of its turf and the richness of its verdure. *Naas* was the ancient residence of the kings of

Leinster. *Maynooth* is the seat of a college for the education of students intended for the Roman Catholic priesthood; Queen's County was named after Queen Mary; the town of *Maryborough* also derives its name from her. She named King's County in honour of her husband Philip of Spain, from whom *Philipstown* also derives its name. *Tullamore* has risen into importance through its position on the Grand Canal. The county business was transferred thither in 1833 from Philipstown. *Mountmellick* is chiefly inhabited by Quakers. *Port Arlington* received its name from Lord Arlington, one of the famous Cabal. The prefix Port was added in consequence of its situation on the Barrow. Port Arlington has long been celebrated for its schools, and here the Duke of Wellington and his brother, the Marquis Wellesley, received the rudiments of their education. *Kilkenny*, the largest inland town in Ireland, has a population of 14,000. It is celebrated for its marble quarries. *Arklow* is celebrated for its oyster fisheries. In the neighbourhood of *Enniscorthy* is Vinegar Hill, where the rebels were defeated in 1789.

MUNSTER.

WATERFORD—Waterford, Dungarvon, Lismore.
TIPPERARY—Clonmel, Thurles, Tipperary, Cashel.
CLARE—Ennis, Kilrush, Killaloe.
LIMERICK—Limerick, Rathkeale.
CORK—Cork, Youghal, Bandon, Kinsale.
KERRY—Tralee, Dingle, Killarney.

Dungarvon is much resorted to for sea-bathing. In *Lismore* Castle the celebrated Robert Boyle, founder of the Royal Society, was born (1626). *Clonmel* was the birthplace of Sterne, author of "Tristram Shandy." *Cashel* lies at the foot of a remarkable eminence known as the "Rock of

ROCK OF CASHEL.

Cashel," which is crowned with the ruins of a cathedral, castle, and other ancient buildings. The prefix *Kil*, which so often occurs in the names of places in Ireland, means a church; *Killaloe* is said to signify "Church of St. Lua." *Limerick*, at the time of the Revolution, was the chief stronghold of James II.; it sustained a memorable siege by the forces of William

III. in 1690 and 1691. The treaty of Limerick, which terminated the struggle in Ireland, was signed in 1691. *Youghal* (you'hal) possesses valuable salmon fisheries: here Sir Walter Raleigh first introduced the culture of the potato. *Kinsale* is a fashionable watering-place. *Dingle* is the most westerly town in the British Islands. At Dingle, as in other towns on the south-west coast of Ireland, many of the houses are built after the Spanish fashion. In former times this coast was much frequented by Spaniards, who came to trade and fish: a number of them also settled in the country.

KINSALE HARBOUR.

CONNAUGHT.

ROSCOMMON—Roscommon, Boyle, Elphin.
LEITRIM—Carrick-on-Shannon.
SLIGO—Sligo, Ballymote.
MAYO—Castlebar, Westport, Killala.
GALWAY—Galway, Tuam, Ballinasloe.

Sligo is a seaport town; but, although it is the only port of much importance upon the western coast between Londonderry and Galway, its trade is very limited. Its abbey has been long famous; and its ruins are classed among the most remarkable in Ireland. *Galway* is a seaport, with commodious docks; trade seems to languish here also. It was at one time a fortified town; but there are few remains left to attest its former strength. *Ballinasloe* has the largest sheep and cattle fair in Ireland. In the neighbourhood of this town, and on the road to Galway, was fought the battle of Aughrim (1691).

THE UNITED KINGDOM.

England, Scotland, and Ireland taken together form the United Kingdom of Great Britain and Ireland.

Government.—The Government of the United Kingdom is a limited monarchy. The *executive* power is vested in the Crown, and is carried out by Ministers appointed by the Sovereign. In Ireland the Sovereign is represented by a Viceroy, who has the title of Lord-Lieutenant. The *legislative* power is shared between the Sovereign and the two Houses of Parliament—the House of Peers and the House of Commons.

The House of Peers is composed of lords spiritual and lords temporal. The spiritual lords are the two archbishops, and twenty-four bishops of the Church of England. The lords temporal embrace all the adult peers of England, together with sixteen representatives of the peerage of Scotland, and twenty-eight of the peerage of Ireland. The representatives of Scotland are elected for each Parliament; those of Ireland are elected for life. The House of Commons consists of 658 members, of which 493 are elected by the various constituencies of England and Wales, 105 are elected by Ireland, and 60 by Scotland. The number of members was settled at the union with Ireland in 1801; since then, by the last Reform Act (1867), six seats for four boroughs—Beverley, Bridgewater, Sligo, and Cashel—have been disfranchised for corrupt practices, reducing the present number of members to 652. The House of Commons regulates the public expenditure of the kingdom, and all bills affecting taxation must originate in that House. No Act of Parliament can become law until it has passed both Houses and received the Royal assent: since the reign of Queen Anne, however, this assent has never been refused.

HOUSES OF PARLIAMENT.

Revenue. — The annual public expenditure of England exceeds £70,000,000, but a large portion of this sum goes to pay the interest upon the National Debt, which now amounts to about £780,000,000. This debt began in the reign of William III., but nearly two-thirds of it is due to the great war which arose out of the French Revolution. At one time it was much larger than it is at present, but during the last twelve years it has been gradually reduced. The annual amount paid as interest is about £26,000,000, which is equal to the cost of our army and navy put together. About two-thirds of our public revenue are derived from duties of custom and excise; and the rest comes chiefly from the property and income-tax, the duties on stamps, the assessed taxes, and the post-office. Such, however, is the great wealth of the country, that the vast expenditure is met without difficulty, and taxation is scarcely felt.

JUDICATURE.—The Sovereign, as head of the executive, is also the fountain of justice, and is supposed to be present in all courts of justice, represented by the judges and magistrates. In order to render the judges thoroughly independent, it has been enacted that when once appointed they cannot be removed except for misconduct. A still greater security for the due administration of justice is trial by jury. The Supreme Court of Judicature sits in the Metropolis, and consists of two divisions: the Court of Appeal and the High Court of Justice. The latter is again sub-divided into—the Chancery division; the Queen's Bench division; the Common Pleas division; the Exchequer division; and the Probate, Divorce, and Admiralty division. In order to save the expense of suitors coming to London on every occasion, England and Wales have been divided into seven circuits, each of which is visited two or three times in the year by two of the judges of the Supreme Court, who summon juries and try such causes as may be awaiting them. The Seven Circuits are—the Northern Circuit, the North-Eastern Circuit, the Midland Circuit, the South-Eastern Circuit, the Oxford Circuit, the Western Circuit, and the Welsh Circuit, which includes the county of Cheshire. In Scotland and Ireland there is a similar arrangement for judicial purposes.

COLONIES AND FOREIGN POSSESSIONS.—The United Kingdom is the centre of a vast empire which embraces territories in every quarter of the globe. In subsequent pages will be found a detailed description of these possessions. It will be sufficient in this place merely to mention them.

In **Europe**: the Channel Islands, Heligoland, Gibraltar, Malta.

Asia: Hindostan, Ceylon, possessions in Further India, Perim, Aden, the Kooria Mooria Islands, Labuan, Hong Kong.

Africa: Cape Colony, Natal, Griqualand West, possessions on the West Coast, and the islands of Ascension, St. Helena, and Mauritius.

America: British North America, British West Indies, British Guiana, the Falkland Islands.

Australasia: Australia, Tasmania, New Zealand, Fiji, and some smaller islands on the South Pacific.

The total extent of the Colonial Empire of England exceeds 8,000,000 square miles; and the population is nearly 300,000,000, or about one-fifth of the whole human race.

ARMY AND NAVY.—In order to protect our vast empire, as well as to watch over the interests of our extensive commerce, it is necessary to keep both the army and navy, but especially the latter, in an efficient state. The standing army amounts to about 130,000 men; this is exclusive of the army in India. There are besides a body of militia, amounting to about 119,000, and the various volunteer corps throughout the country, which include above 150,000 members. The Royal Navy includes nearly 1000 ships of all classes, among which is an iron-clad or armour-plated fleet of about 30 vessels. The line-of-battle ships are divided into squadrons, and stationed in different parts of the world. Thus, there is the Channel Fleet; the Mediterranean Squadron; the West African and Cape of Good Hope Squadron; the North American and West Indian Squadron; and the squadrons stationed in the Pacific, and at China, East Indies, and Australia.

NORWAY AND SWEDEN.

Position and Extent.—Norway and Sweden occupy the Scandinavian peninsula, which extends from north to south for a distance of 1150 miles, and has an area of 294,000 square miles. The rivers Tana and Tornea separate these countries from Russia, and the Scandinavian Mountains, for a considerable distance, form the boundary between Norway and Sweden.

The mean breadth of Sweden is about 200 miles, and that of the southern portion of Norway about 250 miles; but except in the south, Norway is confined to a narrow strip of country adjacent to the coast. Norway stretches as far north as Nordkyn, the extreme north of Europe, and as far south as the Naze in lat. 58°; Sweden extends from about the parallel of 69° as far south as 55° 20′. The area of Sweden is 171,750 sq. miles; of Norway, 122,280 sq. miles.

Coast and Islands.—**Nordkyn** is the most northerly point in Europe: North Cape stands on an island. The west coast of Norway is exceedingly rugged, deeply indented with inlets called *fiords*, and skirted with islands. In the **Lofoden Islands**, which form a great centre for fishing, there are cliffs from 1000 to 4000 ft. in height. The chief headland on the west coast is the bold promontory of **Stadtland**, a little to the north of Bergen. The eastern side of the peninsula is less irregular than the west, and the cliffs are not so high, but inlets are numerous. The islands of **Gothland** and **Oland** belong to Sweden; they are fertile and well watered.

Surface and Minerals.—The Scandinavian Mountains are known in different parts under the names of the *Kiolen Mountains*, *Dovrefield*, and *Hardangerfield*. The mountains do not form a continuous chain, but rather a series of broad plateaus, separated by deep and narrow valleys. One of these plateaus is that of Dovrefield, which is about 3000 ft. in height, and from which rises **Sneehatten** to a height of 7600 ft. Further south, **Skagstoltind**, the highest summit in the peninsula, attains an elevation of 8000 ft.

Sweden upon the whole is a flat country, while Norway is very mountainous. The former is divided into three regions—Gotha in the south, Sweden in the centre, and Norland, including all north of the parallel of 60° 40′. The southern region consists chiefly of vast sandy plains, interspersed with small lakes and hills, and is really a portion of the Great Plain of Europe. The central region contains extensive plateaus covered with forests. The northern part is diversified with mountains, deep valleys, and glens, alternating with sandy wastes and vast forests. Both Norway and Sweden are rich in minerals, including iron, copper, and lead. The **iron** mines of Persberg to the north of Lake Wener, and of Danemora, a village to the north-east of Upsala, are celebrated. **Copper** is worked at Fahlun in the valley of the Dal, and at Roraas in the Dovrefield. There are extensive copper-works also in the neighbourhood of Hammerfest, near the northern extremity of the peninsula.

RIVERS AND LAKES.—The principal rivers of Scandinavia are the Glommen, Gota, Dal, and Tornea.

The **Glommen** rises in a small lake in the Dovrefield, at an elevation of 3600 ft. Passing Roraas with its copper mines, the river flows to the south, and is joined by the Lougen. This feeder has its source in a small lake called *Lessöevark*, which also sends off another stream to the westward, which flows into Romsdal fiord. Leaving this lake the Lougen flows south-east and enters *Lake Miösen*, and ultimately joins the Glommen. The main stream now flows to the south and pours its waters into the Skager Rack after a course of 400 miles.

The **Gota** has its source in *Lake Wener*, and a short distance from the lake it forms the celebrated *Falls of Trolhatta*, where the river descends by rapids 108 ft. in five miles. Lake Wener has an area of about 2000 square miles. It receives several streams, among which is the river Klar, about 250 miles in length, and it is connected by a canal with *Lake Wetter*. Another canal has been constructed so as to avoid the Falls of Trolhatta. The length of the Gota from Wenersborg, where it leaves the lake to Gottenburg at its mouth, is about 70 miles.

CLIMATE AND PRODUCTIONS.—In Norway and in the northern part of Sweden the winter lasts about seven months, and is succeeded by a short hot summer, when mosquitoes are sometimes troublesome. In the central parts of Sweden the winter seldom lasts more than three or four months, and in the south the climate is very similar to that of Germany. Winter is considered a pleasant time by the inhabitants, as the roads are dry, the wind seldom violent, and travelling, by means of sledges, easy and agreeable. Near Tornea, at midsummer, the sun is visible during the whole night; while at Hammerfest, near North Cape, it shines for two months without interruption.

Nearly one-half the surface of Sweden is covered with forests, and in Norway about one-fourth. In the north the timber consists of birch, pines, and firs, which in the central parts are intermixed with ash, willow, and elm; further south the oak and beech are met with. The most common wild animals are the wolf, bear, fox, elk, reindeer, glutton, or wolverine, ermine, and a species of lynx. The wild boar is now found only in the island of Oland. The wolf and bear are chiefly confined to the northern part of the country. Large herds of reindeer are met with in Lapland. The game birds include the ptarmigan, capercailzie, woodcock, and partridge. Eagles and falcons inhabit the cliffs; the wild swan and eider duck are hunted for their down; and the eggs of the latter are highly esteemed. The seas abound with cod, sturgeon, soles, turbot, pilchards, and herrings; and the rivers are well supplied with salmon, trout, perch, and pike.

INHABITANTS.—The people of Norway and Sweden, with the exception of the Laplanders and Finns, are of Teutonic origin, and preserve the characteristics of their race in great purity. They are tall and robust, with light hair, blue eyes, and a fair skin. They are active and enterprising, and the Norwegians are very fond of the sea. In intelligence and education they are scarcely surpassed by any nation in Europe, for where schools are scarce, the children are taught by their parents. The established religion is that form of Protestantism called Lutheran. The population of the whole peninsula is about 6,000,000, of which about 4,300,000 belong to Sweden, and 1,700,000 to Norway.

As only a very small portion of the peninsula of Scandinavia is capable of cultivation, we need not be surprised at the scanty population. Only about one-tenth of the people reside in towns, the majority are scattered in small villages on the shores of lakes and rivers, or at the entrances to the fiords on the west coast. Sometimes the villages are separated from the nearest dwelling by several miles of country. Hence during summer the inhabitants lay up a stock of provisions for the winter months. At Michaelmas they usually kill their cattle, and salt them for the ensuing winter and spring. Twice a year they bake bread in large round cakes, which are strung in files on sticks, and suspended from the ceilings of the cottages. Their food chiefly consists of salted meat, fish, eggs, milk, and bread. It is only in the neighbourhood of the towns that tea and coffee can be had. The peasants use beer for common drink, and are much addicted to the use of spirits. The houses of the peasantry are generally built of wood, and only of one storey. The room in which the family sleep is provided with ranges of beds in tiers, one above the other. The peasants generally spin both flax and wool, and weave their own cloth. The people of Norway and Sweden speak different dialects of the same language, which is of the same stock as the Danish and Icelandic. The Laplanders are of short stature. They generally live in tents, and are clothed with the skins of reindeer and other animals. They are divided into *mountain* Laplanders and *shore* Laplanders. The former are wandering tribes, and possess large flocks of reindeer; the latter subsist chiefly on fishing. They are a simple-hearted and hospitable people, their chief fault being an excessive fondness for ardent spirits. Most of them profess Christianity either as Lutherans or members of the Greek Church.

INDUSTRY.—In Norway the cultivated area does not equal one-fortieth of the whole surface; forests cover about one-fourth, the rest is barren mountain land. *Agriculture* is carried on to some extent, but the produce is not sufficient for home consumption, and corn, meat, and butter are imported. The *fisheries* give employment to a large portion of the population throughout the year; and shipbuilding and timber dressing are important branches of industry. The mineral produce is of considerable importance. In Sweden seven-ninths of the whole population are engaged in agriculture, the chief products being rye, oats, barley, wheat, potatoes, and flax. The manufactures are of no importance, as the peasantry make their own clothing and domestic implements during the long winter months. At Stockholm and Norrkoping, however, some cotton and woollen fabrics are manufactured. *Mining* is carried on to a considerable extent in the central and northern regions, the chief mineral products being iron, copper, cobalt, zinc, with gold and silver in small proportions. The fisheries are not so important as those of Norway, but there are valuable salmon fisheries in the river Klar, and at Norrkoping and Gefle; and an extensive stromming fishery in the Baltic. The *stromming* is about the size of the sprat, but of more delicate flavour. It is salted and cured like the herring, and in Finland and the north of Russia forms a favourite dish with all classes.

The soil of Sweden is mostly thin and poor, but it has been improved by the industry of the inhabitants. On the north side of Lake Wener, round about Carlstadt, it is of a superior description, and there are fertile tracts between Lake Wetter and the Baltic. Most of the fruits and vegetables of England will grow in the south of Sweden. **Wheat** succeeds as far north as the parallel of 63°, but barley will grow within the Arctic Circle. **Tobacco** is grown in the neighbourhood of Stockholm; **hops** as far as the northern limit of wheat. **Flax** has about the same range, and after that of Holland, is perhaps the best in Europe. In the south of Norway and Sweden the domestic animals are the same as our own, but as we proceed northward the horse gives place to the **reindeer**. In Lapland the reindeer and dog are the only domestic animals. About 2000 miles of railway have been opened in Sweden. From Norway the chief articles of export are timber, the produce of the fisheries, minerals, furs, and ice; and she receives in exchange articles of necessary consumption. The chief exports from Sweden are timber, cattle, oats, butter, iron, copper, pitch, and tar; and the imports, colonial produce, wool, cotton, and yarn, spirits, rye, and machinery. The trade is carried on chiefly with Great Britain, the United States, France, and Germany.

TOWNS.—The chief towns in Norway are Christiania, Bergen, Trondheim, and Hammerfest; in Sweden, Stockholm, Gottenburg, Carlscrona, Calmar, Norrkoping, Upsala, and Gefle.

Christiania, surrounded by pine-clad hills, is finely situated at the head of a long *fiord*, to which it gives its name. It is the present capital of Norway, and the chief seat of its foreign trade. It was named after Christian IV., its founder. Its population is about 75,000.

CHRISTIANIA.

Bergen, the second city in Norway, is a well-built town, and contains a college, cathedral, and other public buildings. It is the chief seat of the Norwegian fisheries. The greater part of the fish caught off the Lofoden Islands and the northern coasts are taken to Bergen, whence they are exported to France and the Mediterranean. The population is about 30,000.

Trondheim, the ancient capital, is a well-built town, and contains a cathedral in which the kings of Sweden are still crowned as kings of Norway. It is the outlet for the copper mines of Roraas, and has also considerable trade in timber, tar, and dried fish. During the summer months a steamer sails between Trondheim and Hammerfest, calling at the intermediate stations. **Hammerfest** is the most northerly town in Europe: some miles to the south are extensive copper-works.

Stockholm, the capital of Sweden, is built partly on the mainland, and partly on a number of islands at the entrance to Lake Maëlar. From its position it has been called the "Venice of the north." The streets on the mainland are generally regular, but those on the islands are narrow and crooked; the palace and some of the other public buildings, however, are very fine. It is the chief seat of foreign commerce for the kingdom, and exports iron, timber, and deals. The population is 147,000.

Gottenburg, at the mouth of the Göta, ranks next to Stockholm in trade and population. It has various manufactures of sail-cloth, cotton, and other goods, and possesses breweries, iron foundries, and sugar refineries. By means of the Göta Canal and the river, large quantities of timber are brought from the forests round Lake Wener, and exported from Göttenburg.

Carlscrona, on the south coast, is the chief naval arsenal of the country, and the principal station of the fleet; it is strongly fortified. **Calmar,** a little further north, is famous for the treaty of 1397, by which Denmark, Norway, and Sweden, were united under one sovereign. **Norrkoping,** near the mouth of the Motala, which flows from Lake Wetter, has considerable trade, and manufactures hardware goods, linen, cotton, and coarse woollen fabrics, leather, and other articles.

Upsala, on the river Sala, lies about 40 miles north-west of Stockholm. It is a fine old-fashioned town, chiefly noted for its cathedral and university; the former contains the tombs of Gustavus Vasa, and of Linnæus, who was a professor in the university. **Gefle,** at the mouth of a river of the same name, is the outlet for the copper mines of Fahlun; it also exports timber, pitch, tar, and iron.

STOCKHOLM.

HISTORY.—By the treaty of Calmar, Denmark, Sweden, and Norway were united under the sway of Margaret, Queen of Denmark, who has been styled the "Semiramis of the north." Gustavus Vasa, in the sixteenth century, threw off the Danish yoke; but Norway remained annexed to Denmark until 1815, when the Allied Powers gave it to Sweden. But though under the same sovereign, the two kingdoms have different laws and institutions, and separate legislatures. The King of Sweden must also be crowned King of Norway, and he is bound by the constitution to reside a certain time in Norway.

Sweden possesses one colony, the Island of St. Bartholomew in the West Indies.

DENMARK.

Physical Character.—Denmark consists of two portions: the peninsula of Jutland, which terminates northward in the *Skaw;* and a group of islands including Zealand, Funen, Laaland, and some others. It lies between the parallels of 54° 31′ and 57° 45′ north latitude, and between 8° 5′ and 12° 40′ east longitude. It comprises an area of 14,763 square miles, or less than half of Scotland. The surface is flat, and the coasts low, and in parts of the west coast of Jutland, the country is protected by dykes from irruptions of the sea.

Jutland is intersected by a large number of inlets or lagoons, the principal of these being **Lym Fiord.** At one time this fiord communicated only by a narrow channel with the Cattegat, stretching thence in a westerly direction with long windings almost to the west coast. In 1825, during a violent storm, the narrow isthmus between the North Sea and the fiord was burst through, so that the northern part of Jutland is now insulated; but the new channel is too shallow to be of much use in navigation.

The climate of Denmark is similar to that of Scotland; but the summers are rather hotter, and the winters more severe, owing to its proximity to the continent. In the south-west of Jutland there is a rich marsh land producing the finest pasture and excellent crops, but in other parts of the peninsula the soil is sandy and barren, and there are large tracts of heath. On the islands it is of medium quality. There are no minerals of any importance. Small lakes are numerous, but there are no rivers of any magnitude. The forests, which are not extensive, lie chiefly along the eastern shores of Jutland, and in the islands of Zealand and Funen. They consist chiefly of birch, with ash, alder, and oak; the pine is scarce. The absence of coal is compensated by the abundance of peat. There are few wild animals; the wild boar is occasionally met with in the forests, along with the fox, marten, and pole cat. The streams, lakes, and shores abound with fish.

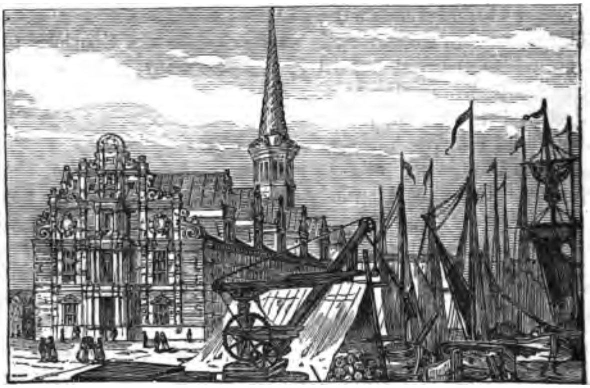
Population and Industry.—The Danes belong to the Teutonic family of nations, but are allied rather to the people of Scandinavia than to the Germans. The government is a limited monarchy; the established religion is

Lutheran, and education is very general. The present population is 1,860,000. Nearly one-half the people live by *agriculture,* and one-fourth by manufactures and trade. The chief articles of cultivation are rye, oats, barley, beans, peas, hops, hemp, and potatoes.

The soil is not well adapted for wheat, and rye is the chief bread-corn of the country. The chief branch, however, of Danish farming is grazing, and great numbers of cattle and horses are reared. The manufactures are not of much importance; the peasantry in most parts of the country spin and weave their own clothing. Woollens, silks, cottons, and linens are manufactured at Copenhagen and other towns; and brewing and distillation are carried on to a great extent. The exports are those of agricultural produce, including horses and cattle, butter, bacon, hams, corn, flour, oil-cake, hides, and skins. The imports are manufactured goods and colonial produce.

TOWNS. — The chief towns are Copenhagen, Elsinore, Odensee, and Aarhuus.

Copenhagen, the capital, is in the island of Zealand, and stands upon the shores of the Sound. It is a beautiful town with several palaces, museums, and other public buildings. It also possesses a university, the only one in Denmark. The population is nearly 200,000. In 1699 it was besieged by Charles XII. of Sweden, who transported his army, baggage, and cannon across the frozen Sound.



COPENHAGEN.

Elsinore, lying further to the north, is the place where the "Sound dues" were formerly paid by all ships which entered the Baltic. The custom of payment, after lasting five centuries, was abolished some years ago. **Odensee** is the chief town in the island of Funen. **Aarhuus** is on the east coast of Jutland.

HISTORY.—Denmark attained the height of its prosperity under Queen Margaret, who came to the throne in 1385. Four years later the people of Sweden elected her their sovereign; and by the treaty of Calmar (1397), the three northern kingdoms were placed under one crown. The Swedes threw off the Danish yoke in the beginning of the sixteenth century, but Norway remained annexed to Denmark until 1815. In the meantime the provinces of Schleswig and Holstein had been added to Denmark through the accession of the house of Oldenburg to the throne. In 1863, Frederick VII., last of the direct line of the house of Oldenburg, died, and the inhabitants of the duchies, who were chiefly of German origin, broke into open revolt. Austria and Prussia sent their combined armies to aid the insurgents, and the result was that Schleswig, Holstein, and the small duchy of Lauenburg were wrested from Denmark and annexed to Germany (1864).

DEPENDENCIES.—Besides Jutland and the islands already mentioned, **Bornholm**, in the Baltic, belongs to Denmark, and she also numbers among her possessions the Faroe Islands, Iceland, Greenland, and the islands of Santa Cruz, St. Thomas, and St. John in the West Indies.

The **Faroe Islands** are a rocky group lying to the north of Scotland, about the parallel of 62°. The climate is mild, humid, and variable. The soil is in general thin, but oats and rye, turnips and potatoes thrive. The chief employments of the people are fishing and rearing sheep, and woollen hose form an article of export. The population of the entire group is about 9000. *Thorshaven*, on the island of Stromöe, is the only town; it has a population of 1600.

Iceland is a large island lying immediately south of the Arctic circle, and has an area of nearly 40,000 square miles. The shores are rugged and deeply indented, and a great portion of the interior is covered with snow-clad mountains and streams of lava. The whole island bears marks of its volcanic origin, and besides its volcanoes, Iceland has its famous *geysers* or boiling springs. *Hecla*, an active volcano, 5000 ft. in height, is the mountain best known, but there are other volcanic summits of still greater elevation. It is said that during the last six centuries there has never been in Iceland an interval of more than forty years without either an eruption or a great earthquake; and some eruptions of Hecla have continued for six years. The climate is mild for the latitude, but corn will not ripen; potatoes, however, and other vegetables are grown. Reindeer are numerous and in a wild state; foxes are common, and polar bears occasionally visit the shores. The inhabitants, who number about 70,000, live chiefly in the south-west. Their food consists principally of rye bread, butter, milk, and fish, with fresh meat occasionally. The chief employments are fishing and cattle rearing. The people are intelligent and educated, and the established religion is Lutheran. The island is governed by an officer appointed by the King of Denmark. The capital, *Reikiavik*, has a population of about 2000 inhabitants.

HOLLAND, OR THE NETHERLANDS.

Boundaries and Extent.—Holland is bounded on the north and west by the German Ocean; south by Belgium; east by Prussia. Its average length, from north to south, is about 150 miles; its mean breadth about 100 miles; and its total area 12,680 square miles.

The province of Luxemburg, which lies on the borders of Belgium, Prussia and France, is an independent state; but the King of Holland is its grand-duke. It was declared a neutral territory by the great European powers in 1867. It has an area of about 1000 square miles, with a population of 200,000.

Surface.—The entire surface of Holland is flat, and a large portion of it is below the level of the sea. It consists partly of land formed by the deposits of the rivers which intersect it, and partly of land gained from the sea.

The islands, which extend from the Helder to the mouth of the Weser, once formed a part of the mainland; the island of Walchern and others, which form the province of Zealand, have, on the other hand, been gained from the sea. The whole coast from the Helder, for a considerable distance southward, is protected by a natural barrier of sand hills of great breadth, and frequently 40 or 50 ft. in height. These hills or *dunes*, as they are called, have been carefully planted with a kind of reed, the roots of which bind the sand together. In other parts, as in Zeeland, and on the eastern side of Zuyder Zee, strong dykes have been constructed to keep back the sea. It has been found necessary also to form embankments along the rivers, as the channels of many of them are above the level of the country.

Rivers.—The principal rivers are the lower courses of the Scheldt, Meuse or Maas, and Rhine. Only the mouth of the **Scheldt** is within Dutch territory, but a considerable portion of the course of the **Meuse** lies in Holland. It enters the country a short distance above Maastricht, and for some distance forms the boundary between Belgium and Dutch Limburg. It then continues its northward direction, but after passing Venlo, curves round to the west and joins one of the branches of the Rhine. The **Rhine**, when it enters Holland, has a breadth of about 2000 ft., and it soon afterwards splits into two branches, the southern one taking the name of *Waal*. The northern branch next throws off the *Yssel*, which flows northward into the Zuyder Zee. Further west, it again divides—the main channel taking the name of *Leck*, while the *Old Rhine* flows past Utrecht and Leyden. Midway between these towns branches off the *Amstel*, which flows into the channel called the Y. The delta of the Rhine occupies an area of about 4000 square miles.

There are, properly speaking, no lakes in Holland, but there are a number of shallow *meers;* many of these have, however, been reduced in size by drainage.

The *Haarlem Meer*, which formerly lay to the south of the Y, and covered an area of 70 square miles, has now been completely drained. The total quantity of land recovered in this way, during the last four centuries, in the two provinces of North and South Holland alone, is said to amount to about 350 square miles. But all former efforts of the kind are eclipsed by a project now before the Dutch government for reclaiming the *Zuyder Zee*. In ancient times this part of Holland consisted of forest and open lowlands, in the centre of which was the Lake Flevo, which received the waters of the Amstel and Yssel. Towards the end of the twelfth century this tract was inundated by an irruption of the sea. About a century later, a more formidable irruption took place, and the Strait of Helder was permanently formed; and by the middle of the fourteenth century, the Zuyder Zee (*South Sea*), as it now exists, was permanently formed. It is not, however, of great depth, and its navigation is difficult and intricate. The cost of draining the Zee has been estimated at £14,000,000, and the quantity of land to be reclaimed is about 650 square miles. The government and people of Holland are favourable to the scheme.

CLIMATE AND PRODUCTIONS.—Holland is colder than any part of England in the same latitude, and the navigation of the great canal between Amsterdam and the Helder is annually closed for three months by the ice. Sometimes even the Zuyder Zee is frozen over. Contrary to the general rule, the eastern parts of the country are warmer and more healthy than the western provinces. The country is exposed to strong winds; but this is an advantage, as they clear the air from the exhalations which arises from the numerous marshes and stagnant ponds, and at the same time are useful in driving innumerable windmills. The soil is generally fertile, but there are no minerals of importance except *potter's clay* and *fuller's earth.* Coal is entirely wanting, but there are extensive beds of excellent peat, especially in the provinces of Friesland and Holland. There are no forests, and few wild animals. The pools and marshy grounds abound with frogs and other reptiles, which are a favourite food for the storks. The coasts abound with fish, including herrings, cod, turbot, and soles. The herring fishery is an important branch of industry.

There is some timber in the eastern provinces, and in the neighbourhood of the Hague, Utrecht, and Haarlem there are woods of oak, elm, and beech; the banks of the canals also are often lined with rows of poplars and willows. Hares and rabbits are plentiful, but not winged game; waterfowl, however, are abundant. The **stork**, which is so useful in keeping down the reptiles, is a great favourite, and severe penalties are inflicted upon those who wilfully injure it. These birds remain in Holland from the middle of February to the middle of August. In towns they build their nests on the tops of houses; in the country, where there are no trees, and where buildings are scarce, an old cart wheel is often erected upon a high pole for their convenience. The stork spends its winter in Africa or Asia Minor. Granite and limestone are obtained from Limburg, and conveyed down the Meuse to the other provinces.

PEOPLE.—The population of the Netherlands, exclusive of Luxemburg, is 3,700,000. The people belong to the Gothic or Teutonic family, and the natives of Friesland are supposed to be the purest type of the Gothic race.

The Dutch, as the inhabitants of Holland are called, are celebrated for their sobriety, industry, and cleanliness. They are, however, fond of smoking and drinking tea. A beggar, or a drunken man, is seldom seen; and the houses, gates, and fences are always bright, clean, and in good repair. Public *education* is in a highly advanced condition. There is a regular system of elementary schools established by the state, and it was from Holland that this country introduced the pupil teacher system. No person can open a public school, or even receive private pupils, unless he has received a certificate of his ability to teach; and all schools are under official inspection. There are three grades of schools corresponding to our elementary, middle class, and grammar schools; and above these are the universities of Leyden, Groningen, and Utrecht.

There is no *established religion*, but the royal family, with about two-thirds of the population, belong to the Reformed Church. The ministers of all sects are paid by the government. The Reformed Church is Presbyterian in character; the Roman Catholics are presided over by the Archbishop of Utrecht, under whom are four bishops.

The *government* is a limited monarchy. The legislature, called the States-General, consists of two chambers, the members of one being nominated by the king; those of the other are elected by the people. Each province also has its local legislature. Holland is not a great military power, and has only a small standing army; but the fleet is considerable.

INDUSTRY.—*Agriculture* forms the chief employment of the people; but the rearing of live stock and dairy husbandry are carried on to a greater extent than tillage. Large numbers of lean cattle are brought from Denmark and Germany to fatten on the rich Dutch pastures. Dairy farming is carried on to great perfection, and large quantities of butter and cheese are sent to England. The principal grains cultivated are rye and buckwheat, next to which are oats and barley. Wheat of good quality is grown in Friesland, Utrecht, South Holland, and Zeeland. Among other articles of cultivation are flax, hemp, chicory, madder (used in dyeing), tobacco, hops, and potatoes. The *manufactures* are not of much importance, and are chiefly for home consumption. They include cotton, woollen, linen, and silk fabrics; bricks, shipbuilding, and the distillation of a spirit called "Geneva," or Hollands. Diamond cutting employs about 1000 hands in Amsterdam. The *commerce* is very considerable; the exports are cheese, butter, cattle, flax, hemp, madder, clover, and seeds.

Two or three centuries ago the commerce of Holland was the most extensive in Europe, but it has declined owing to the growth of trade and navigation in other countries. Two circumstances, however, still contribute to render it a commercial nation: it has valuable possessions in the East Indies, and supplies the most of Europe with nutmegs, cloves, and other spices; and as it has command of the mouths of the Rhine, Meuse, and Scheldt, it is the great medium of exchange between Great Britain and the central countries of Europe.

INTERNAL COMMUNICATION.—The internal trade is carried on chiefly by canals, which intersect the country in all directions, and are as numerous as roads are in England. The principal is the Grand Ship Canal between Amsterdam aud the Helder, which is large enough to allow two frigates to pass each other. Another canal connects Maastricht with Bois-le-Duc; a third important one is that between the river Ems and Harlingen in Friesland, on the shore of the Zuyder Zee. A short canal which shall connect the estuary of the Y with the North Sea is now being constructed. Above 1000 miles of railway have been opened, these connect together the chief cities, and extend to the frontiers of Belgium and Prussia.

TOWNS.—The following is a list of the provinces with the chief towns:—

NORTH HOLLAND—Amsterdam, Haarlem, Saardam, Hoorn.
SOUTH HOLLAND—Rotterdam, the Hague, Leyden, Schiedam.
ZEELAND—Middleburg, Flushing.
NORTH BRABANT—Bois-le-duc, Breda, Bergen-op-Zoom.
LIMBURG—Maastricht, Roermond, Venlo.
UTRECHT—Utrecht, Amersfoort.
GUELDERLAND—Nimeguen, Arnheim, Zutphen.
OVERYSSEL—Zwolle, Deventer, Kampen.
DRENTHE—Assen, Meppel.
FRIESLAND—Leeuwarden, Harlingen.
GRONINGEN—Groningen.

Amsterdam, at the mouth of the Amstel, and on the channel named the Y, is the capital of Holland, and by far the most important town. It is built in the form of a crescent, the streets are generally strait and well paved, and the houses are all built of brick and painted various colours. It is intersected by a large number of canals which are crossed by nearly 300 bridges, most of which are built of stone. Amsterdam has some considerable manufactures, but is chiefly noted as a place of trade. Its shipbuilding yards and immense storehouses are its striking features. The population is 280,000.

AMSTERDAM.

Haarlem, to the west of the capital, carries on an extensive trade in flowers and flower seeds. **Saardam**, on the north side of the Y, is noted for its shipbuilding yards. Here Peter the Great of Russia wrought as an ordinary workman in 1697, in order to learn the art of shipbuilding. The hut which he occupied is still kept up. **Hoorn** was the birthplace of Schouten, who discovered Cape Horn (Hoorn) in 1616; and of Tasman, who discovered Van Dieman's Land and New Zealand (1642).

Rotterdam, on the north bank of the principal branch of the Meuse, is the second city of Holland in trade and population. It is the great outlet for the countries drained by the Meuse and Rhine, and exports agricultural and colonial produce, grain, timber, and wine. Erasmus was born here in 1467. The population of Rotterdam is about 120,000.

The **Hague** (*S' Gravenhage*), to the north-west of Rotterdam, is the seat of government, and of the Supreme Court of Justice. It is one of the best built cities in Europe; the streets are wide and straight, and there are numerous walks shaded with trees. An avenue, three miles in length, leads to the watering-place of *Scheveling*, on the coast. It was from this port that Charles II. embarked in 1660. *Ryswick*, which gave its name to the celebrated treaty of 1697, is a village lying two miles to the south-east of the Hague. The population of the Hague is 95,000.

Leyden, on the Old Rhine, about 6 miles from the sea, is an old town surrounded by country seats, pleasure grounds, meadows, and gardens. In 1573-4 it sustained a memorable siege from the Spaniards, and as a reward, was offered by the Prince of Orange either exemption from certain taxes, or the establishment of a university. It chose the university, which soon became famous. Rembrandt, the painter, was born in the vicinity of the town in 1606. **Schiedam**, to the west of Rotterdam, is celebrated for its manufacture of the spirit called Geneva or Hollands.

Bois-le-duc, *Bergen-op-zoom*, *Maastricht*, and *Nimeguen* are strong fortresses. **Breda** is celebrated for its treaty (1660). **Utrecht** is one of the best situated cities in Holland, being built on a tract of ground more elevated than the surrounding country. It is the seat of a university. The union of Utrecht, by which the united provinces of Holland formally declared their independence, was signed in 1579: the peace of Utrecht, in 1713. **Zutphen**, on the Yssel, is memorable for the death of Sir Philip Sydney, 1586. **Zwolle** was formerly one of the Hanse towns, and it has still considerable trade. The celebrated Thomas à Kempis was for sixty-four years a monk of an Augustine priory in this town, and he died there in 1471.

COLONIES.—The Dutch possessions in Asia comprise the islands of Java and Celebes; portions of Borneo, Sumatra, and New Guinea, the Moluccas, and several smaller islands; in the West Indies, Curaçao, and five small islands belong to Holland; and in South America Surinam or Dutch Guiana.

BELGIUM.

Boundaries and Extent.—Belgium is bounded on the north by Holland, on the east by Germany, on the south by France, and on the west by the North Sea. It is divided into nine provinces: Antwerp, Brabant, West Flanders, East Flanders, Hainault, Liege, Limburg, Luxemburg, and Namur, comprising a total area of 11,373 sq. miles. It extends from 49° 30′ to 51° 30′ north latitude, and from 2° 30′ to 6° 5′ east longitude.

Belgium was formerly united to Holland, and formed the kingdom of the Netherlands, but since 1830 has formed a separate state.

Surface and Minerals.—The coast of Belgium, which is only about 40 miles in length, is low and flat, but is skirted by sand hills called *dunes*, which rise sometimes to the height of 40 or 50 ft., and have a breadth varying from one to three miles. Most of these dunes are planted with firs. Beyond the dunes to the east, the provinces of West and East Flanders and Hainault form a rich, well-cultivated plain, which with its canals, dykes, and numerous villages, bears a striking resemblance to Holland. Brabant is of a similar character, but the surface is more diversified. To the north-east, in the provinces of Antwerp and Limburg, there is an extensive plain called the *Campine*. It consists of moors, marshes, peat bogs, and extensive tracts of sand, covered with heath, broom, and stunted firs, though there are some tracts of good pasturage. In the south-east the country is hilly, and in some parts wild and rugged. In the provinces of Namur, Liege, and Luxemburg, the scenery is picturesque, and forms a portion of the hilly and wooded region of the Ardennes, a tract which fills up the space between the Meuse and Moselle. The highest elevations in these regions exceed 2000 ft., and one of these summits is the hill which overlooks the celebrated springs of Spa to the south-east of Liege.

The hilly district of Belgium is rich in mineral wealth. Coal is abundant in the provinces of Hainault and Liege; iron in Namur, Liege, Limburg, and Luxemburg; lead in the same provinces; and copper in Liege

and Hainault; **zinc** in Hainault and Namur. Good building stone is found all along the French frontier; excellent **slates** are quarried in the neighbourhood of Dinant; and whetstones, grindstones, and millstones from various parts. In the level districts of the east and north, the only mineral product of importance is clay for the manufacture of tiles, pottery, and pipes.

RIVERS.—The rivers of Belgium are the Meuse and Scheldt.

The **Meuse** rises in the plateau of Langres, and flowing north-west through Verdun and Sedan, enters Belgium a little south of Dinant. It then flows almost due north to Namur, where it is joined by the Sambre. It now turns to the north-east, and, just before reaching Liege, receives the Ourthe. A short distance below Liege, it enters the territory of Holland. The portion of its course, within the confines of Belgium, is about 100 miles in length, but this portion drains an area of above 4000 square miles.

The **Scheldt** rises in France, and flows through Cambray and Valenciennes. It enters Belgium a little above Tournay, and, flowing in a general direction to the north, is joined at Ghent by the Lys. It now turns to the north-east, and receives on the right bank the Dender and the Rupel, the latter bringing with it the waters of the Senne, Dyle, and Nethe. At Antwerp the Scheldt has a breadth of 2000 ft., and is navigable for the largest ships. The total length of the Scheldt is 250 miles, and about half its course is through Belgium, and nearly one-half of the country lies within its basin.

CLIMATE AND PRODUCTIONS.—The climate is less chilly and damp than that of Holland, and is very similar to that of the south of England. In the south-east districts the air is clear, bracing, and healthy; but in the north-west it is damp and hazy, and some districts in the two Flanders are subject to fever and ague. About one-fifth of the whole surface of the country is covered with woods and forests. The forests of Liege, Namur, and Luxemburg are remains of the ancient forest of Ardennes, which, in the time of Cæsar, extended from the banks of the Rhine to the city of Rheims. Large forests are also found in the province of Hainault. In the great forests oak is abundant; but other European trees, such as the birch, beech, lime, chestnut, elm, plane, maple, and poplar are common. The roads, canals, and hedge-rows are also lined with trees, and plantations of Scotch fir are raised on tracts which would otherwise be barren. The extensive forests of Luxemburg afford shelter to a few wild boars, bears, wolves, and roebucks; foxes are not common in any part of the country. The heaths of Verviers, in the province of Liege, are believed to be the only places in Europe where the great heath cock can be found.

The *Forest of Soignies*, between Brussels and Waterloo, contains nearly 30,000 acres covered with valuable timber. One thousand acres of it are possessed by the family of the Duke of Wellington; they were granted to the late duke along with the title of Prince of Waterloo. The romantic forest of St. Hubert, in the western part of Luxemburg, is the scene of Shakespeare's "Forest of Arden," in *As You Like It*. From the oak forests of Luxemburg are derived immense supplies of charcoal for the iron-works in that part of the country; and the bark, considerable quantities of which are exported to England, forms an important article of commerce.

PEOPLE.—The population of Belgium exceeds 5,000,000, which is about 450 persons to a square mile. In the province of East Flanders, however, which is the most populous part of the kingdom, the average is 700 to a square mile. About two-thirds of the population are Flemings, who are of the same origin as the Dutch: the remainder are chiefly Walloons and French.

The *Flemings*, who inhabit the provinces of Antwerp, the two Flanders, part of Brabant, and the greater portion of Limburg, speak a dialect of the Dutch language; a portion of Limburg and Luxemburg are occupied by Germans. The *Walloons* occupy the provinces of Liege, Namur, Hainault, and part of Brabant and Luxemburg, and speak a dialect of the ancient French; but throughout the country French is the language of the educated classes, and is also the official language of the government.

The established *religion* is Roman Catholic, but other religions are tolerated; almost the whole population, however, belong to the established religion. There are four universities: Brussels, Louvain, Ghent, and Liege; and a large number of middle class schools and colleges, but elementary education is rather backward. The *government* is an hereditary monarchy. The legislature consists of a Senate and a Chamber of Representatives, both elected by the people. Belgium maintains, comparatively, a large army. In time of peace it consists of 40,000 men, and there is a reserve of 60,000. Every able man who has completed his nineteenth year is liable to conscription, though substitution is permitted. The legal term of service is eight years, but one-half, as a rule, is spent on furlough. The navy is small but increasing. Belgium possesses no colonies.

The Belgians possess no distinctive national character, but upon the whole resemble the French more than their other neighbours. They are very fond of music and dancing. Garden balls are very common in the evenings of summer; and musical festivals are annually celebrated at Bruges, Ghent, and Antwerp, when prizes are distributed. The national taste for music is manifested in the numerous chimes of 50 or 100 bells called *carillons*, which are placed in the church steeples and towers of the town-halls. Gothic architecture has been carried to a high degree of perfection in Belgium. The cathedrals of Antwerp, Ghent, and Mechlin are magnificent structures; and the town-halls of Brussels, Louvain, Ghent, Ypres, and Bruges are unequalled for size and elaborate ornament.

INDUSTRY.—In no country in the world has *agriculture* been carried to a greater state of perfection, little more than one-eighth of the whole being uncultivated. About one-half the land is arable, and one-fifth meadow and pasture. About twice the quantity of corn required for home consumption is produced—rye, oats, wheat, and barley being the grains chiefly cultivated. Rye bread is generally consumed among the working classes. Beetroot is extensively grown and manufactured into sugar. Flax and hemp, chicory, tobacco, woad, and madder are also cultivated. Woad and madder are used in dyeing, and large quantities of the latter are imported by Belgium. The cattle are mostly stall-fed, and clover is the principal food. Flanders is noted for its breed of horses.

The *manufactures* are very important, and consist of woollen goods, linen, cotton, silk, lace, and hardware. The textile fabrics are made chiefly in the north and west; in the south and east are the chief iron-works.

The chief seats of the **woollen** manufacture are Verviers and Liege. Tournay is celebrated for its carpets, which are also manufactured to a less extent at Brussels, Antwerp, Ghent, Bruges, and Courtray. Ghent, St. Nicholas, and Termonde are the principal seats of the **linen** trade. The finest **lace** is made at Brussels, Mechlin, Louvain, and Bruges. **Cotton** and **silk** goods are chiefly manufactured in the provinces of East Flanders and Antwerp; the principal towns engaged in making cotton are Ghent, St. Nicholas, Antwerp, and Turnhout. Silks and velvets are made at Antwerp and Lierre.

The **iron-works** are chiefly situated along the banks of the Meuse and its tributaries. Liege manufactures cannon and fire-arms, steam-engines, machinery, and ironmongery of all kinds. Namur is celebrated for its cutlery. There are various metal manufactories also at Mons, Charleroi, St. Tron, Louvain, and Verviers.

The *commerce* of Belgium is not so great as might be expected. This is owing to its small extent of coast-line, and to the fact that the outlet of its two rivers are in the hands of the Dutch. The chief imports are colonial produce, and the raw materials for the woollen and cotton manufactures. The exports are corn, flax, hemp, coal, lace, and other articles of manufacture.

The **roads** are excellent; canals are numerous; and railways more used than in any other country. Most of the railways are under the control of the government, and the principal lines converge in the town of Mechlin.

TOWNS.—The following is a list of provinces with the chief towns in each:—

WEST FLANDERS—Bruges, Courtray, Ypres, Ostend.
EAST FLANDERS—Ghent, St. Nicholas, Alost, Termonde.
HAINAULT—Mons, Tournay, Ath, Charleroi.
BRABANT—Brussels, Louvain, Tirlemont.
ANTWERP—Antwerp, Mechlin, Lierre, Turnhout.
LIMBURG—St. Tron, Tongres, Hasselt.
LIEGE—Liege, Verviers, Spa.
NAMUR—Namur, Dinant.
LUXEMBURG—Arlon, Bouillon.

Bruges is intersected by numerous canals which are crossed by more than fifty bridges: hence the Flemish name *Brügge*, that is bridges, which the French softened into Bruges. Its present population is about 50,000, but five centuries ago it contained four times that number of people. **Courtray**, on the Lys, about 25 miles south-west of Ghent, carries on important manufactures of cotton and linen fabrics. **Ypres** was formerly famous for its manufacture of linens, and the fabric called "diaper" (*d'Ypres*) derives its name from the town. **Ostend** is a packet station for England, and as a watering-place is much resorted to by visitors from France and Germany.

Ghent, at the confluence of the Scheldt and Lys, is the chief seat of the cotton trade in Belgium; it ranks next to the capital in population. It was the birthplace of the Emperor Charles V., and of John of Gaunt. The present population is about 130,000. **Mons**, near the French frontier, is strongly fortified. It possesses cotton and linen factories, and there are valuable coal mines in the neighbourhood. The battle of *Jemappes* (1792) was fought near the town on the west. **Tournay**, on the Scheldt, another frontier town, is also strongly fortified. To the south-east is the village of *Fontenoy*, where a battle was fought (1745). **Charleroi**, on the Sambre, stands in the midst of valuable mines of coal, slate, and marble. About 9 miles from the town are the ruins of the once magnificent *Abbey of Alne*, whose cloisters were supported by 300 pillars of variously coloured marbles.

Brussels, the capital, stands on the Senne, a feeder of the Dyle. It is a handsome, well-built city, and a kind of miniature Paris. It is celebrated for its lace and carpets. The population is 314,000. Ten miles to the south is the *Field of Waterloo*, and a little beyond, *Quatre-bras* and *Ligny*. **Louvain**, in the fourteenth century, was celebrated for its woollen and linen manufactures; but the manufacturers having revolted against the Duke of Brabant in 1382, many of them emigrated to foreign countries. Some of these came to England and assisted in founding our woollen manufacture. It still possesses some manufactures, but is now chiefly famous for its beer. It possesses a university.

Antwerp, on the Scheldt, is a fine old city with a noble cathedral. It is the centre of the foreign trade of Belgium, and vessels of the largest size can reach its quays. The city is strongly fortified on the land side, and the banks of the Scheldt below the city are protected by forts. The population is about 126,000. **Mechlin** (Fr. *Malines*), on the Dyle, is celebrated for its lace. It is also famous for its educational institutions. The Archbishop of Mechlin is primate of Belgium. **Liege**, at the confluence of the Meuse and Ourthe, lies in the midst of coal mines and iron-works. Its population exceeds 100,000. **Verviers**, lying to the east, is famous for its cloth factories and dye-works. **Spa**, to the south, is famous for its mineral springs. It was formerly so celebrated for its waters that "Spa" became a common name for mineral springs and watering-places wherever found. It is a pleasant spot surrounded by trees and gardens, and over-hung by wooded mountains. **Namur**, at the confluence of the Meuse and Sambre, stands in the midst of valuable mines of coal, iron, lead, and copper, and is celebrated for its manufacture of fire-arms and cutlery.

PALACE OF REPRESENTATIVES, BRUSSELS.

Belgium is full of places of historic interest, and has been called the "Battle-field of Europe." Among the more celebrated of its many battle-fields are Seneffe (1674), Fleurus (1690 and 1794), Steinkirk (1692), Ramillies (1706), Oudenard (1708), Fontenoy, Jemappes, and Waterloo.

FRANCE.

BOUNDARIES AND EXTENT.—France is bounded on the north by the English Channel; on the west by the Bay of Biscay; on the south by the Pyrenees and the Mediterranean; and on the east by Italy, Germany, Luxemburg, and Belgium.

The Alps form a natural boundary between France and Italy; the Jura mountains separate it from Switzerland; the southern part of the Vosges separate it from a portion of Germany; but beyond the parallel of 48° 35′, these hills lie within the confines of German territory, and the north-eastern frontier of France, from this point to the shore of the North Sea is an artificial line.

France extends from 42° 20′ to 51° 5′ north latitude; and from 7° 45′ east to 4° 45′ west longitude. Its length from north to south is about 600 miles; its greatest breadth nearly as much, and its total area is about 204,000 sq. miles.

COAST-LINE.—France is well situated as a maritime power, as she possesses an extensive coast-line, and commands both the Atlantic and Mediterranean. The shores are not so much indented as those of England, and the chief openings are the estuaries of the four principal rivers. From Calais to the mouth of the Loire the coast is rocky and rather high. This is especially so in Brittany, where the cliffs are lofty and precipitous. A little to the west of Calais is **Cape Grisnez**, with chalk cliffs like the shores on the opposite side of the channel. From this point the coast makes an irregular curve to **Cape la Hague**, which terminates the peninsula of Cotentin. Immediately to the west of the peninsula lie the Channel Islands, which belong to England. The shore now runs westward, and then turns south to **Point du Raz**, the most westerly point in France. Immediately to the north are the Bay of Douarnenez and the harbour of Brest. A large sweep of coast now leads round to the frontier of Spain, and forms the eastern side of the Bay of Biscay.

Between the mouths of the Loire and Gironde the coast is low, and frequently lined with salt marshes. Still farther south is the district called the *Landes*, a low sandy tract interspersed with marshes and belts of pine forests. Several islands skirt the west coast; among the more important of these are Ushant, Belle Isle, and Oleron.

The Mediterranean coast is for the most part low and sandy; and where it surrounds the Gulf of Lyons it is bordered by salt lagoons. The Gulf of Lyons is generally supposed to derive its name from the town of Lyons, but this is probably an error. A writer of the thirteenth century calls it the "Lion's Sea," and says it is so named because "it is ever rough, tempestuous, and destructive." Between Marseilles and Toulon, the coast becomes of a bolder character, and rocky cliffs lead thence to the borders of Italy. The total length of coast-line belonging to France is about 1500 miles.

SURFACE AND MINERALS.—Taken as a whole, France is a level country, though high mountain chains bound it on the south and south-east. The **Pyrenees**, which present their steep slope towards the north, are separated from the elevated land in the interior of France by the *Plain of Languedoc,* which stretches from the Bay of Biscay to the Mediterranean. The **Alps** are separated from the rest of France by the valley of the Rhone. From the Plain of Languedoc the **Cevenne Mountains** run northward between the basins of the Rhone and Loire as far as the *Plateau of Langres.* The height of the Cevennes averages from 2000 to 3000 feet, but Mont Mezin, near the source of the Loire, reaches a height of 5800 ft. The plateau of Langres is connected on the east with the southern portion of the **Vosges Mountains.** A branch of the Cevennes, which divides the Loire from its feeder the Allier, is called the **Forez Mountains,** and west of the Allier are the **Auvergne Mountains,** where Puy de Sancy reaches a height of 6200 ft., and forms the culminating summit of the interior. In Brittany, there is a plateau of considerable elevation; but, with this exception, the country to the north and west of the Auvergne Mountains consists of flat uninteresting plains.

The chief mineral products of France are coal, iron, salt, lead, and copper. There are altogether nearly fifty coal-fields in France, but the produce is scarcely one-eleventh of that of Great Britain. The largest **coal-field** is in the neighbourhood of St. Etienne, in the upper part of the basin of the Loire. **Iron** is abundant among the Cevennes, the Vosges, and the Jura Mountains, as well as in the peninsula of Brittany. **Salt** is obtained from the Vosges and Jura Mountains, and also by evaporation along the Mediterranean coast. **Lead** and **copper** are worked in Brittany and other hilly districts, and **silver** is frequently associated with the lead.

Mineral springs are very numerous in France. It is said that there are no fewer than 700 springs of a medicinal character, though only about 90 are frequented by visitors. Of these the best known are the sulphureous springs of Luchon in the Pyrenees; the saline springs of Aix, near Marseilles; the chalybeate springs of Plombières, and the cold springs of Enghien.

RIVERS.—With the exception of the Rhone, all the considerable rivers of France flow either to the north or west. The chief rivers are the Seine, Loire, Garonne, and Rhone. To these may be added the *Adour*, which rises in the Pyrenees and enters the Bay of Biscay below Bayonne; the *Somme*, which rises in the north-east of France, and flows into the English Channel; and the upper courses of the Scheldt, Meuse, and Moselle. There are no lakes of any importance.

The **Seine** rises in the Plateau of Langres, and flows with a general direction to the north-west, passing the towns of Paris and Rouen. It empties itself into the English Channel by an estuary, at the entrance of which stands Havre. Its chief feeders on the right bank are the Aube, Marne, and Oise; on the left, the Yonne and Eure. Its length is about 450 miles, and the area of its basin is about 30,000 square miles. As the river rises at no great elevation, the current is gentle and well suited to navigation; and below Paris the stream has a very winding course.

The **Loire** rises on the western slope of the Cevennes, and flows north-west to Nevers, near which place it is joined by the Allier. This tributary also rises in the Cevennes, and flows in a course parallel to the main stream from which it is separated by the Mountains of Forez. After receiving the Allier, the Loire continues its course to the north-west until it reaches Orleans. It then turns westward, and having been joined by the Cher and Vienne on the left bank, and by the Sarthe on the right, it empties itself below Nantes in the Bay of Biscay. Its length is about 600 miles, and the area of its basin is about 50,000 square miles. The Loire rises at an elevation of 4600 ft., and therefore has a rapid current. It is subject to frequent inundations, to prevent which banks have been constructed below Orleans. In some places the navigation is interrupted by sandbanks, and below Nantes there are numerous islands and shallows.

The **Garonne** rises in the Spanish Pyrenees, near the Peak of Maladetta, and shortly afterwards enters France near the celebrated watering-place of Luchon. It now flows with a general direction to the north-east as far as Toulouse, and is augmented on its way by the waters of the Ariege. Flowing now to the north-west, it is joined on the right bank by the Tarn and Lot, both of which rise in the Cevennes, and below Bordeaux it enters the estuary of the Gironde. This estuary also receives the waters of the Dordogne, which flows from the Auvergne Mountains. The **Gironde** is about 40 miles in length, and its greatest width is 7 miles; at its mouth, however, it is only 3 miles. A succession of islets and sandbanks renders navigation intricate; the scenery along the shore consists for the most part of bare rocks and dreary heaths, and the estuary is subject to a tidal bore which is often very destructive to shipping. The total length of the Garonne, exclusive of the Gironde, is 350 miles, and it drains an area of 33,000 square miles. Owing to the melting of the snow in the

Pyrenees, the Garonne is sometimes visited by disastrous floods. The valley of the river, however, is celebrated for the richness of its products, and the beauty of its scenery. Being connected at Toulouse with the Canal-du-Midi, the Garonne is the channel of considerable trade which centres in Bordeaux.

The **Rhone** rises in a glacier near Mount St. Gothard at an elevation of 5780 ft., and flows at first south-west as far as Martigny; then bending to the north-west it enters *Lake Geneva*. Issuing from the lake the river flows for a short distance to the south-west, and then enters a rocky gorge called the Perte-du-Rhone, where its waters are hidden by limestone rocks which nearly meet across the stream. The Rhone now flows almost due south for some distance, then taking a sharp bend to the north-west, it afterwards flows almost due west to Lyons, where it is joined by the Saone. This tributary rises in the plateau of Langres, between the sources of the Meuse and Moselle, and flows south-west until joined by the Doubs. The latter rises in the Jura Mountains, and flows for a considerable distance to the north-east, after which its course is south-west until it joins the Saone at Verdun. The Saone now flows almost due south, and at Lyons mingles its muddy stream with the blue waters of the Rhone.

From the confluence of the Saone to the Mediterranean the course of the Rhone is southward, and it is joined on the right bank by the Ardèche; on the left by the Isère and Durance. It enters the sea by a delta which has an area of about 2000 square miles. The Rhone is a rapid river, but is navigable by steamboats. Being connected by canals with the principal rivers of France, it has considerable trade which centres in Lyons and Marseilles. The total length of the river is about 600 m., and it drains an area of about 38,000 square miles.

Climate and Productions.—The climate upon the whole is very agreeable. In the north it differs very little from that of England; in the south, along the shores of the Mediterranean, it is very hot, but the centre enjoys a happy medium of temperature. In the basin of the Rhone the sky is generally bright, and the atmosphere clear; but on the north-west side of the great watershed, the air is constantly charged with vapour brought by the westerly winds, and the weather is more or less cold for half the year. A good general idea of the climate may be obtained by dividing the country into four regions, which are characterised by the growth of wheat, the vine, maize, and the olive respectively. A line drawn from the mouth of the Loire to Sedan, on the Meuse, marks off the first region, where the climate and productions are similar to those of England. A line from the entrance of the Gironde to the town of Nancy, in the valley of the Moselle, separates the region of the vine from that of the maize. Lastly, a line from Bagnères de Luchon, near the source of the Garonne, to Grenoble on the Isère, separates the region of the maize from that of the olive, and marks off the hottest part of France.

The soil of France is upon the whole very productive, though there are large tracts of mountains and heathy land. Forests cover about one-eighth of the entire surface. The most richly wooded parts are the Vosges, the Juras, the Plateau of Langres, the Cevennes, the Mountains of Auvergne, and the neighbourhood of Orleans. The Alps and Pyrenees are not well wooded. The trees consist chiefly of oak, birch, pine, beech, elm, chestnut, and in the south the cork tree. In the Vosges and Jura Mountains, in Brittany, and in the district south of the Gironde called the Landes, there are extensive forests of fir. The chestnut woods in the department of Haute-Loire are celebrated.

The forests afford shelter to the *wolf* and *wild boar*. The black and brown bears are confined to the higher ranges of the Pyrenees, where the *chamois* is also met with. The lynx is sometimes, but rarely, seen among the Cevennes. The pole-cat, fox, and weasel are abundant in many departments, and hares and rabbits are extremely numerous. In some parts the *green frog* is reared in large numbers as an article of food. The birds include the vulture, eagle, and bustard. Waterfowl are numerous in many parts, especially on the west coast, and on the Mediterranean shores the flamingo is met with. Oysters are abundant on the north and west coasts; leeches are exported in large numbers, and in the south cantharides and the cochineal insect are met with.

POPULATION. — The present population of France is 36,000,000, the great majority of whom are Roman Catholics. Both the Catholic and Protestant clergy are paid by the state. Education is placed under a special department of the state, which is presided over by a Minister of Public Instruction. There are four universities: those of Paris, Poitiers, Toulouse, and Montpellier. There are also various colleges or "faculties" of theology, law, and medicine; naval and military schools, and the Ecole Polytechnique at Paris for the training of young men in civil and military engineering. Every commune or parish also is obliged to maintain at least one elementary school; and every department has a normal school for the training of teachers. The form of government is republican, and the legislature consists of two elective chambers, the Assembly and the Senate. France has always taken rank as a great naval and military power.

The ancient name of France was Gallia or Gaul, and in the time of Cæsar the bulk of the inhabitants were *Celts*. In the fifth century the country was overrun by various German or Gothic tribes, the chief of which were the *Franks*, who gave their name to the country. Thus the French, like the English, are a mixed race, but among them the Celtic element predominates. In the north-west the *Bretons*, a Celtic race, still exist in great purity. In the south-west, bordering on the Pyrenees, are the *Basques*, who speak a peculiar dialect unlike any other European language. The French language is divided into two dialects: that spoken to the north of the Loire, or French proper; and the Romance or Provençal tongue spoken to the south of the Loire. These dialects were formerly distinguished as the *Langue d'oui* and the *Langue d'oc:* the word *oui* (yes) in one dialect being represented by *oc* in the other. The French have all the characteristics of the Celtic races. They are distinguished by their taste and politeness, and by a fondness for society, amusement, and military glory; but they are also fickle and impulsive.

INDUSTRY.—About three-fifths of the population are engaged in **agricultural** pursuits. The chief article of cultivation is wheat, and next in importance the vine. Besides these rye, barley, maize, oats, potatoes, beetroot, tobacco, the mulberry, flax, and hemp are cultivated. Fruit trees, including the olive, chestnut, walnut, citron, fig, apple, pear, and plum abound, and are very productive.

Wheat is chiefly grown in the north and centre of France, and maize in the south and south-west. *Rye* is cultivated in almost every part of the country, but chiefly in the centre and south. The vine is cultivated more or less throughout the whole kingdom, except in the northern departments where its place is taken by the orchards, and where cyder and perry are the ordinary beverages. The departments in which the greatest extent of land is devoted to **vineyards** lie in the basin of the Garonne chiefly, and include the Gironde, Charente-Inferieure, Charente, Dordogne, Lot-et-Garonne, Gers, Herault, and Gard. Gironde is celebrated for its claret; Charente for its brandy. The departments of Marne and Aube forming the ancient province of Champagne; and those of Côte d'Or and Saône-et-Loire, comprised in Burgundy, are celebrated for the superior quality of the wines produced.

The cultivation of *beetroot* for the manufacture of sugar is extensively pursued in the neighbourhood of the capital, and in the departments of the north and east. It began during the wars of Napoleon, when colonial produce was difficult to obtain. The growth of *tobacco* is restricted to eight departments in different parts of the country, and the duty levied upon it is a lucrative source of revenue to the government. *Hemp* and *flax* are grown in the northern departments; and in the south there are large plantations of *mulberry* trees grown for the sake of the silk worms. The *olive* is not cultivated so much as formerly, as a severe winter destroys the trees, even in the most favourable localities. The oil produced in the neighbourhood of Aix, in the department of Bouches-du-Rhone, is considered the best. *Chestnuts* are very abundant in some of the central and southern departments. The chestnut crops of Ardèche in the Cevennes, and of Haute-Vienne, south of the Loire, are very valuable.

A large number of cattle are reared in France, and throughout a great part of the country the ox is preferred to the horse for farm labour. Sheep also are very numerous, and wool is an important article of rural produce. Poultry of all kinds are plentiful, and eggs are exported in immense numbers to England and elsewhere. Great attention is paid to the rearing of bees in many parts. Narbonne, in the province of Aude, is famous for its honey, but that produced in the departments of Jura, Basses-Alpes, and Calvados, is also of excellent quality.

The **fisheries** of France are not so important as we should expect from the length of coast. On the north-east coast, from Dunkirk to St. Valery, at the mouth of the Somme, the sole, ray, mackerel, and herring fisheries give employment to the inhabitants at different times of the year. The *pilchard* fishery is pursued on the coast of Brittany, and also along the coast of La Vendee and Charente-Inferieure. On the Mediterranean coast the *anchovy* fishery is of some importance, especially in the department of Var. *Oyster* fisheries also form an important branch of industry. Large numbers are taken at the mouth of the Seine, as well as at St. Malo and elsewhere, and are sent to Paris.

Manufactures.—As respects the extent and value of her products, France ranks as a manufacturing country, next to Great Britain. She labours, however, under the disadvantage of an insufficient supply of coal, and iron is much dearer than in England. The most important manufacture is that of silk fabrics; next in importance are the woollen, linen, and cotton manufactures, and the making of jewellery, china, hardware, leather, and other articles.

The **silks** of France are unrivalled in Europe, and by some are considered superior to those of any country in the world. The raw material is partly produced in France, and partly imported from Italy. The chief town engaged in the manufacture is Lyons; but considerable quantities are also made at Paris and Tours in the north; and at St. Etienne, Avignon, and Nismes in the south-east. About four-fifths of the total quantity manufactured are exported to other countries. Tours, on the Loire, is the place where it was first manufactured; the manufacture was introduced from Italy in the reign of Louis XI.

The **woollen** manufacture is the oldest and most widely diffused. It is chiefly carried on in the departments of the north and north-east. The chief seats of the manufacture are Sedan, on the Meuse; Louviers, Elbeuf, and Rouen in the basin of the Seine; and Abbeville and Amiens in the department of the Somme. *Shawls* are made at Rheims, Paris, and Lyons; *carpets* at Paris, Abbeville, and Amiens. The finer qualities of cloth are made at Sedan and Louviers. The finer sorts of wool used in the manufacture are imported from Germany.

Linens are manufactured principally in the north-east. St. Quentin, Valenciennes, and Cambrai are noted for their *cambrics;* Valenciennes, Lille, and Dieppe are also celebrated for *lace*. At St. Malo and at Rennes, in the same department, large quantities of coarse linen, canvas, and sacking are made. Various branches of the linen manufacture, especially the making of *muslins*, are carried on at Lyons and in the neighbourhood.

The **cotton** manufacture is carried on in the same district as that of linen, the principal towns engaged in it being Rouen, Abbeville, Amiens, Lille, Cambrai, and St. Quentin. Cotton is also manufactured at Angers, Orleans, and Lyons. The material called *gingham* derives its name from Guingamp in Brittany (department of Côtes-du-Nord), where its manufacture is still carried on to a large extent.

The manufacture of clocks and watches, jewellery, artificial flowers, and fancy articles of all kinds is carried on chiefly in Paris. Sèvres, about 5 miles to the west of the capital, is celebrated for its *china*, which is also made at Paris, Limoges, Toulouse, and in other places. The manufacture of *hardware* has its principal seat in the district of the Cevennes and Auvergne Mountains. The town of St. Etienne is the chief centre. Tulle, on an affluent of the Dordogne, is celebrated for its fire-arms; Thiers, on an affluent of the Allier, for its cutlery. This branch of hardware is also carried on at Langres and other places in the neighbourhood. Toulouse is famous for its scythes, and here also there is a large cannon-foundry. *Shipbuilding* is carried on to a considerable extent at Cherbourg, Brest, Rochefort, Bordeaux, and Bayonne, as well as at Marseilles and Toulon on the Mediterranean coast.

Commerce.—The foreign trade of France consists chiefly in the export of her manufactures and agricultural produce, and in the imports of colonial produce and raw material for her manufactures. The chief imports are raw silk, raw cotton, fine wool, linen yarn, hides, timber, iron, and coal, with tea, sugar, tobacco, indigo, spices, cattle, cotton fabrics, and other manufactured articles. The principal exports are silks and woollen goods, wines, brandy, lace, gloves, haberdashery, clocks, watches, jewellery, fruits, and perfumery. The chief country with which she trades is England. In 1874 the value of her exports to the United Kingdom was £46,500,000, and the value of her imports from the United Kingdom amounted to nearly £30,000,000. She also carries on a large trade with the other countries of Europe; with Algeria and the other French possessions; and with Egypt, the United States, and Brazil. The chief ports for foreign trade arranged in order of importance are Marseilles, Bordeaux, Havre, Nantes, Rochelle, Boulogne, Calais, Dunkirk, Dieppe, St. Malo, L'Orient, and Bayonne.

INTERNAL COMMUNICATION.—The principal highways are good, but the cross-roads are inferior to those of England. There are nearly 8000 miles of water communication, of which 2350 miles consist of canals. The chief canals are the *Canal du Midi*, between the Garonne and the Mediterranean; the *Canal du Centre*, between the Loire and Saône; the *Canal du Rhone au Rhin*, between the Rhine and Doubs; and the *Canal du Burgoyne*, between the Saône and Yonne, a tributary of the Seine. The system of railways is very extensive, forming an aggregate of about 12,500 miles at work, and 3000 in process of construction. The tunnel through Mont Cenis connects the French system of railways with that of Italy; and it is proposed to connect it with those of England by means of a submarine tunnel from Calais to Dover.

DIVISIONS AND TOWNS.—Previous to the Revolution of 1789, France was divided into 34 provinces. It was at that time, however, parcelled out into 86 departments, one of which consists of the island of Corsica. The departments, with the exception of that of Seine in which Paris stands, are nearly equal in size to our English counties, and they are subdivided into arrondisements, cantons, and communes or parishes. In 1860, Nice and Savoy were ceded to France by the King of Italy, and three other departments were formed out of them, thus raising the total number to 89. In 1871, however, the ancient province of Alsace and a portion of Lorraine were re-transferred to Germany from which they had been taken two centuries before, and in this way the number of the departments was once more reduced to 86. The names of the ancient provinces are still in popular use, and it is well to become familiar with their position, since they are intimately associated with the history of England and France. In the following list we give first the ancient province, next the departments which are comprised in it, and then the chief towns in each department, the capital in each case coming first.

NORTHERN DEPARTMENTS.

PROVINCES.	DEPARTMENTS.	TOWNS.
Flandre, - - -	Nord, - - - -	Lille, Dunkirk, Cambrai.
Artois, - - - -	Pas de Calais, - -	Arras, Boulogne, Calais.
Picardie, - - -	Somme, - - -	Amiens, Abbeville.
Normandie, - - -	Seine Inferieure, - -	Rouen, Havre, Dieppe.
	Eure, - - - -	Evreux, Louviers.
	Orne, - - - -	Alençon.
	Calvados, - - -	Caen, Bayeux, Honfleur.
	La Manche, - - -	St. Lo, Cherbourg.
Bretagne, or Brittany, -	Ille-et-Vilaine, - -	Rennes, St. Malo.
	Cotes-du-Nord, - -	St. Brieux, Guingamp.
	Finisterre, - - -	Quimper, Brest.
	Morbihan, - - -	Vannes, L'Orient.
	Loire Inferieure, - -	Nantes, St. Nazaire.
Maine, - - - -	Mayenne, - - -	Laval, Mayenne.
	Sarthe, - - -	Le Mans.
Anjou, - - - -	Maine-et-Loire, - -	Angers, Saumur.
Touraine, - - -	Indre-et-Loire, - -	Tours.
Orleanais, - - -	Loire-et-Cher, - -	Blois, Vendôme.
	Loiret, - - - -	Orleans.
	Eure-et-Loir, - -	Chartres.
Ile de France, - -	Seine, - - - -	Paris, St. Denis.
	Seine-et-Oise, - -	Versailles.
	Oise, - - - -	Beauvais, Compiègne.
	Aisne, - - - -	Laon, St. Quentin, Soissons.
	Seine-et-Marne, - -	Melun, Meaux, Fontainebleau.
Champagne, - - -	Ardennes, - - -	Mezières, Sedan.
	Marne, - - - -	Chalons-sur-Marne, Rheims.
	Aube, - - - -	Troyes.
	Haute Marne, - -	Chaumont, Langres.
Lorraine, - - -	Meuse, - - - -	Bar-le-duc, Verdun.
	Meurthe-et-Moselle, -	Nancy, Luneville.
	Vosges, - - - -	Epinal, Plombieres.

It will be seen that the departments are generally named after some striking natural feature which they contain, very often after the principal river which intersects them.

Lille, a strongly fortified town, has some important manufactures of cotton, woollen, and linen; its population is about 155,000. **Dunkirk** was captured by England in the time of Cromwell, but sold to the French by Charles II. **Arras**, the birthplace of Robespierre, was once famous for its tapestry. **Calais**, an important packet station, was in the hands of the English from 1347 to 1558. Between Calais and Amiens lie the battle-fields of *Agincourt* (1413) and *Crecy* (1346). *St. Valery*, a small place at the mouth of the Somme, was the port from which the Conqueror set sail (1066). **Rouen**, the great centre of the cotton manufactures of France, stands on the Seine about 40 miles from its mouth. It contains a noble cathedral built by William the Conqueror, in which is the tomb of Cœur de Lion; its population is about 100,000. **Havre**, on the north side of the estuary of the Seine, is a place of great trade, being as it were the port of Paris. It is strongly fortified, and contains a naval arsenal; the population is about 75,000. **Bayeux**, an ancient but decayed town is celebrated for its tapestry, now preserved in the Hôtel de Ville, which is supposed to have been worked by Matilda, the Conqueror's wife. It is 214 ft. in length, 20 inches broad, and is divided into 72 compartments, and represents the principal incidents in the conquest of England by the Normans. **Cherbourg** is one of the chief naval stations of France. It has a fine breakwater, and its approaches are strongly fortified. The port of *La Hogue*, which lies a few miles to the south-east, gave its name to the great naval battle that was fought in the adjacent waters (1692).

Rennes, the former capital of Bretagne, stands on the Vilaine; its present population is about 50,000. **Guingamp**, from which we derive our word "gingham," has still important manufactures of cotton and linen. **Brest**, the principal station of the French navy, is strongly fortified; the population is about 80,000. **L'Orient** is another naval station, and has a large dockyard. **Nantes**, at the mouth of the Loire, has important manufactures of woollen, cotton, and linen fabrics, as well as numerous sugar-refineries and shipbuilding yards. As a port it ranks next to Havre; the population is about 112,000. The *Edict of Nantes*, granting toleration to Protestants, was passed in 1598, and revoked in 1685. **Tours** stands on a narrow tongue of land between the Loire and Cher, and is noted for the beauty of its environs. This was the first town in France where silk was manufactured, and it still produces both silk and woollen goods; the population exceeds 40,000. **Blois**, about midway between Tours and Orleans, possesses some important manufactures and considerable trade. It was here that the Duke of Guise and his brother were murdered by order of Henry III. (1588); and here Catharine de Medici died. **Orleans** is situated amidst a fertile and well-cultivated country. In the city is a bronze statue erected to Joan of Arc, who compelled the English to raise the siege (1429).

Paris, the capital of France, and the second city in Europe in size and population, stands on both banks of the Seine. It is surrounded by walls which are fortified at intervals, and in 1870 it underwent a long siege before being compelled to yield by famine. In the magnificence of its public buildings, and in the number of its literary and scientific museums, galleries, and other institutions, it is perhaps unrivalled. The National Library is one of the largest in the world; and the galleries of the Louvre contain perhaps the finest collection of paintings and sculpture in Europe. The manufactures of Paris are important, and include silks, cottons, jewellery, and fancy articles of all kinds. The present population is nearly 2,000,000. *Sevres*, with it famous manufacture of porcelain, lies about five miles to the west. Five miles still further west is *Versailles*, where the National Assembly holds its sittings. *St. Cloud*, also on the left bank of the Seine, is about four miles from Paris. *St. Denis*, the ancient burial place of the kings of France, lies three miles to the north; and *St. Germains*, the residence of James II. after his abdication, is twelve miles to the north-west.

PALAIS ROYAL.

Compiegne is pleasantly situated near the confluence of the Aisne and Oise. It was at the siege of this town that the Maid of Orleans was made prisoner (1431). The royal chateau of Compiegne, built by Louis XV., is one of the finest structures of its kind in France. **Soissons** is a fortified town on the Aisne; it was here that Clovis defeated the Roman general, and put an end to the Western Empire (486). **Fontainebleau** stands about two miles from the left bank of the Seine, in the midst of a large forest. It is famous for its royal palace where Napoleon signed his abdication (1814). **Sedan,** on the Meuse, is memorable for the surrender of Napoleon III. and 100,000 men, on Sept. 2, 1870. At **Chalons-sur-Marne,** Attila was defeated in 451. *Epernay*, a short distance to the west, is a great entrepôt for wines. **Rheims,** on an affluent of the Aisne, has one of the most magnificent cathedrals in Europe; here the kings of France were crowned, with few exceptions, from the time of Philip Augustus. **Troyes,** the former capital of Champagne, was at one time famous for its fairs. It is said that from this town we get our term "Troy weight." **Nancy,** the former capital of Lorraine, is said to be one of the handsomest towns in France. It was twice besieged by Charles the Bold of Burgundy, who was killed under its walls (1477). **Plombieres** is a celebrated watering place.

Central Departments.

Provinces.	Departments.	Towns.
Franche Comté, - -	Haute Saône, - -	Vesoul, Belfort.
	Doubs, - - -	Besançon.
	Jura, - - - -	Lons-le-Saulnier.
Bourgogne or Burgundy,	Ain, - - - -	Bourg-en-Bresse.
	Saone-et-Loire, - -	Macon, Chalons-sur-Saône.
	Côte-d'Or, - - -	Dijon.
	Yonne, - - - -	Auxerre.
Lyonnais, - - -	Rhone, - - - -	Lyons.
	Loire, - - - -	St. Etienne.
Auvergne, - - -	Cantal, - - - -	Aurillac.
	Puy-de-Dôme, - -	Clermont-Ferrand.
Bourbonnais, - -	Allier, - - - -	Moulins, Vichy.
Nivernais, - - -	Nièvre, - - - -	Nevers.
Berry, - - - -	Cher, - - - -	Bourges.
	Indre, - - - -	Chateauroux.
Marche, - - -	Creuse, - - - -	Gueret.
Limousin, - - -	Haute Vienne, - -	Limoges.
	Correze, - - -	Tulle.
Angoumois, - - -	Charente, - - -	Angoulême, Cognac.
Poitou, - - -	Vienne, - - -	Poitiers.
	Deux Sevres, - -	Niort.
	Vendée, - - -	Napoleon-Vendèe.
Aunis-Saintonge, - -	Charente-Inferieure, -	La Rochelle, Rochefort.

Belfort is famous for its heroic defence during the Franco-German war. **Besançon,** on the Doubs, is one of the strongest fortresses in France. Its principal branch of business is watchmaking, and it carries on considerable trade with Switzerland; the population is about 50,000. **Chalons-sur-Saone,** at the eastern extremity of the Canal-du-Centre, is a place of considerable trade. In 1273, Edward I. attended a tournament here which resulted in a fight called "The little war of Chalons." **Dijon,** the former capital of Burgundy, is a well-built town, situated in a beautiful locality. It is a depôt and market for Burgundy wines. Forty-five miles to the south-west stands *Le Creuzot*, celebrated for its extensive iron-works.

Lyons is the second city in France in point of population, and the first silk manufacturing city in Europe. It is admirably situated for trade, and exports silks, woollens, linens, straw bonnets, grain, chestnuts, and hardware. The population is about 325,000. **St. Etienne,** on an affluent of the Loire, stands in the centre of one of the richest coal-fields of France. It has important manufactures of fire-arms, hardware, and cutlery, as well as of silks and ribbons; the population is 96,000. **Clermont-Ferrand** is surrounded by an amphitheatre of volcanic mountains, of which Puy-de-Dôme is the culminating peak. It has considerable inland trade and four large fairs are held annually. It was here that the famous council, which decided upon the First Crusade, was held. Gregory of Tours and Pascal were natives of Clermont. **Tulle** is supposed to have given its name to a fine kind of linen fabric, but the article is not made there now, nor in the neighbourhood. Its chief manufacture now is that of fire-arms. It has twelve annual fairs, one of which lasts three days. **Cognac,** on the Charente, is famous for its brandy. **Poitiers,** on a tributary of the Vienne, is chiefly memorable for the victory of the Black Prince (1356). Between this city and Tours the Saracens were defeated by Charles Martel in 732. **La Rochelle** is famous for its siege in 1627. **Rochefort** is one of the great naval stations of France.

Southern Departments.

Provinces.	Departments.	Towns.
Guienne,	Gironde,	Bordeaux.
	Dordogne,	Perigueux.
	Lot-et-Garonne,	Agen.
	Tarn-et-Garonne,	Montauban.
	Lot,	Cahors.
	Aveyron,	Rodez.
Gascogne,	Hautes Pyrenees,	Tarbes, Bagnères-de-Bigorre.
	Gers,	Auch.
	Landes,	Mont-de-Marsan.
Bearn,	Basses Pyrenees,	Pau, Bayonne, Biarritz.
Foix,	Ariège,	Foix.
Roussillon,	Pyrenees Orientales,	Perpignan.
Languedoc,	Haute Garonne,	Toulouse, Bagnères-de-Luchon.
	Tarn,	Alby.
	Aude,	Carcassonne, Narbonne.
	Herault,	Montpellier, Cette.
	Gard,	Nismes.
	Lozère,	Mende.
	Ardèche,	Privas.
	Haute Loire,	Le Puy.
Dauphiné,	Isère,	Grenoble, Vienne.
	Drôme,	Valence.
	Hautes Alpes,	Gap, Briançon.
Avignon,	Vaucluse,	Avignon, Orange.
Provence,	Basses Alpes,	Digne.
	Bouches-du-Rhone,	Marseilles, Aix, Arles.
	Var,	Draguinan, Toulon.

The following departments were not included in the ancient provinces of France:—

	Haute Savoie,	Annecy.
	Savoie,	Chamberry, Aix-les-Bains.
	Alpes Maritimes,	Nice, Cannes, Mentone, Monaco.
	Corsica,	Bastia, Ajaccio.

Bordeaux, on the Gironde, is perhaps the second port in France, and is the great emporium of the wine trade. It was the birthplace of the Black Prince and his son Richard II. The population is about 200,000. **Perigueux** is famous for a kind of partridge and truffle pie, extensively exported, and known as *patés de Perigueux*. **Agen**, on the Lot, has an important sail-cloth factory which supplies the French navy; it is also celebrated for its scarlet and red dyes. Bagnères-de-**Bigorre** and Bagnères-de-**Luchon** are both celebrated for their thermal springs. **Pau** is pleasantly situated, and a great resort for strangers, particularly English. Its castle was the birthplace of Henry IV. of France, and the chamber in which he was born, in 1553, still retains its ancient pictures and furniture, including a tortoise-shell cradle of the king. Bernadotte, king of Sweden, was also a native of Pau. **Bayonne**, at the mouth of the Adour, is a seaport and first-class fortress—bayonets were invented here. Four miles to the west is *Biarritz*, a favourite watering-place. **Perpignan** is also a strongly fortified frontier town. **Toulouse** has considerable trade in grain, wine, olive oil, and hardware; it contains a large cannon foundry. The battle of Toulouse was fought in 1814. The population of Toulouse is about 130,000. It was from the town of **Alby** that the *Albigenses*, so cruelly persecuted in the Middle Ages, acquired their name. **Narbonne** and **Nismes** are famous for their Romain remains. **Montpellier**, a well laid out city, is a great resort for invalids; its population is nearly 60,000. **Cette,** at the mouth of the Canal-du-Midi, is a place of considerable trade. Its salt-works are very extensive.

Grenoble, on the Isère, is agreeably situated in a well-wooded district. It is famous for its manufacture of kid gloves. The town contains a bronze statue of Chevalier Bayard who is interred here. **Vienne,** on the Rhone, is pleasantly situated in a beautiful district. The famous council which abolished the Order of the Templars was held here in 1311. **Briançon,** on the Durance, stands at an elevation of above 4000 feet. It commands the passage into Italy by Mont Genèvre, and is strongly fortified. **Avignon** was the residence of the Popes from 1305 to 1377. **Orange,** on an affluent of the Rhone, derives its chief interest from its Roman remains, the principal of which is a splendid triumphal arch. The town was for a long time the capital of a small principality which gave its name of Orange to the royal family of Holland. The principality was ceded to France at the Peace of Utrecht.

Marseilles has an excellent harbour, and is the chief port in France. Its trade was almost doubled after the French acquired Algeria. It was founded by a colony of Greeks about six hundred years before Christ; its present population is above 300,000. **Aix** and *Aix-les-Baines* are both celebrated for their hot springs which were known to the Romans. **Arles,** on the Rhone, where the delta begins, was a flourishing town in the time of Cæsar, and has some fine Roman remains. It has considerable trade, but the situation is considered unhealthy. **Toulon** is one of the five naval stations of France, and has a population of nearly 80,000. It was at the siege of Toulon that Napoleon Bonaparte first distinguished himself. *Nice*, *Cannes*, and *Mentone* are all celebrated for their salubrity, and large numbers of invalids resort to them. Nice has a population of 50,000; the other places are comparatively small. **Monaco,** a town with a population of about 2000 inhabitants, is the capital of a small principality which is under the protection of France.

The island of **Corsica,** which forms one of the departments of France, has an area of 3377 square miles. The surface is generally hilly, and culminates in *Monte Rotondo*, which exceeds 9000 ft. in height. There are valuable quarries of marble and granite, and the forests supply excellent timber. The climate is delightful, and the soil fertile, but a great part is left uncultivated. Cattle constitute the chief wealth of the peasantry; and there are coral fisheries on the east coast. The chief exports are wine, olive oil, fruits, and fish. The inhabitants, who are Italians in race, number about 250,000. The chief towns are Bastia and Ajaccio. *Bastia*, on the east coast, is the largest town, and the chief seat of trade. *Ajaccio*, on the west side of the island, was the birthplace of Napoleon Bonaparte (1769).

COLONIES.—The colonies and foreign possessions of France are numerous and important.

In **Asia.**—Pondicherry, Mahé, Carical, Yanaon, and Chandernagore, in Hindostan; and Saigon, in Cochin China.

In **Africa.**—Algeria, Senegambia, Gaboon on the Guinea coast; with Bourbon, or Réunion, and several other islands in the Indian Ocean.

In **America.**—The islands of St. Pierre and Miquelon, in the Gulf of St. Lawrence; Martinique and Guadaloupe, in the West Indies; and Cayenne, or French Guiana, in South America.

In **Polynesia.**—New Caledonia, Marquesas Islands, Low Archipelago, with Tahiti and others of the Society Group.

SPAIN.

Boundaries and Extent.—Spain is bounded on the north by the Pyrenees and the Bay of Biscay; on the west by the Atlantic and the kingdom of Portugal; on the south by the Atlantic, the Strait of Gibraltar and the Mediterranean; and on the east by the Mediterranean. It lies between 36° and 43° 45′ north latitude, and extends from 3° 20′ east to 9° 20′ west longitude. Its length from north to south is about 540 miles, its greatest breadth about 670 miles, and it comprises an area of 196,000 square miles.

Spain and Portugal together form a peninsula, and, so far as natural features are concerned, constitute but one region. The boundaries between the kingdoms are merely artificial, and Spain embraces about five-sixths of the total area.

Coast-Line.—The peninsula is compact in form and has but few indentations, thus contrasting with the coast-line of Norway. The shores on the north are steep and rugged, as the Cantabrian Mountains run close to the sea. On the south and east the coast-line is less bold, and fertile plains slope to the Mediterranean. The northern coast forms the southern shore of the Bay of Biscay, and it runs from east to west almost in a straight line from the mouth of the Bidassoa to **Cape Ortegal**. To the south-west is **Cape Finisterre** (Land's End), the most westerly point in Spain.

Between the two capes there is a fine inlet, on the south side of which stands *Corunna*, rendered interesting to Englishmen by the victory and death of Sir John Moore (1809). To the south of Finisterre the coast-line is more broken by deep indentations than in any other part of the peninsula, and there are several fine natural harbours. On one of these stands *Vigo*, memorable for the victory gained over the Spanish Plate fleet by the allied forces of England and Holland in 1702.

Commencing at the mouth of the Guadiana, on the southern shore of Spain, a sweep of coast leads round to **Cape Trafalgar**, famous for Nelson's victory in 1805. To the south-east is **Tarifa Point**, the southern extremity of Europe. North-east from Point Tarifa is the bay and Rock of **Gibraltar**. The coast now runs north and then east to **Cape Gata**, the chief inlets being Malaga Bay and the Bay of Almeria. From Cape Gata the shore sweeps round to **Cape Palos**, a second curve brings us to **Cape St. Martin**, and then a large sweep ends at **Cape Creux**.

Surface and Minerals.—The interior of Spain consists for the most part of an elevated table-land which slopes gently towards the Atlantic. It is bounded on the north by the **Pyrenees**, on the south by the **Sierra Morena**, and on the east a broken ridge, which, under the name of **Celtiberian Mountains**, runs south-east from the source of the Ebro, separates the table-land from the fertile plains which lie on the shores of the Mediterranean. The table-land is intersected by three large rivers, the Douro, Tagus, and Guadiana, and the basins of these rivers are separated by the Mountains of Castile and Toledo. The range known under the general name of Castilian Mountains averages from 5000 to 6000 ft., and includes the **Sierra de Guadarama** to the north-west of Madrid, and the **Sierra de Gredos** further west. The Mountains of Toledo, on the south side of the Tagus, have a less average elevation, and in their western extremity are known as the **Sierra de Guadaloupe.** The Sierra Morena, when viewed from the plateau, seems of no great height, but on the south it makes a rapid descent to the valley of the Guadalquiver. Between the table-land and the **Sierra Nevada** are broad and fertile plains of inconsiderable elevation, but the Nevada range rivals the Pyrenees in elevation, and in its culminating point exceeds them.

The word **sierra** means a saw, and it is applied to the mountain ranges in the Spanish peninsula, on account of the jagged appearance which their summits present when viewed from a distance. The Sierra Morena (Brown Mountains) are so called because they are clothed with forests. The Sierra Nevada (Snowy Mountains) rise in some summits above the snow-line.

Spain is rich in minerals, but few mines are worked to any great extent. The Pyrenees contain valuable seams of graphite, or black lead, and ores of iron, copper, and zinc. **Iron** and **coal** abound in the Cantabrian Mountains, and **tin** has long been worked in Galicia. The Sierra Morena and Sierra Nevada ranges are also extremely rich in minerals. The **quicksilver** mines of Almaden have been worked for 2000 years, and are yet productive. But the most valuable existing Spanish mines are those of **lead** in Granada. The Sierra de Gador, to the south of the Sierra Nevada, is remarkable for its lead mines, and the lead is also rich in silver. Mines of **rock-salt** are found in La Mancha, in the neighbourhood of Montserrat in Catalonia, and at other places. From the Sierra Nevada the finest **marbles** are obtained, many of which adorn the churches of Granada and Seville.

Rivers.—The rivers of Spain are numerous, but owing to the general dryness of the climate, the volume of water which they contain is not great. The channels through which they flow are generally deep, the currents often strong, and hence, upon the whole, the streams are not of great service either for purposes of trade or irrigation. Owing to the general slope of the country, the chief rivers flow westward, the only exception is the Ebro. The Minho, Douro, Tagus, Guadiana, and Guadalquiver flow into the Atlantic; the Segura, Xucar, Guadalaviar, and Ebro into the Mediterranean.

The **Minho** rises in the north-east of Galicia, and flowing southward it is joined by the Sil. It then turns south-west, and in the lower part of its course forms a boundary between Spain and Portugal. It is about 200 miles in length, but is not navigable.

The **Douro** rises in the Celtiberian Mountains, and drains the northern portion of the central plateau. It receives a large number of feeders, the principal of which are the Pisuerga, Esla, and Tormes; but all are mere torrents. For about 50 miles it forms the eastern boundary of Portugal, and then flows through that kingdom to Oporto, which stands at its mouth. Its total length is about 500 miles, and it drains an area of nearly 40,000 square miles, which is greater than that of any other river in the Peninsula. The only navigable part of its course, however, is in Portugal, and even there the navigation is obstructed by rocks and shallows.

The **Tagus** rises in the Celtiberian Mountains within 100 miles of the Mediterranean, and flows across the table-land between the mountains of Castile and Toledo. Its course is for the most part through an arid country, destitute of wood and uncultivated; its banks are steep, its current rapid, and its waters muddy. Its length is about 600 miles, but the area of its basin is inferior to that of the Douro, since it is hemmed in by mountains on the north and south, and has therefore no tributaries of any great importance. Near its mouth it expands into a basin which at one part is 7 miles across, but at Lisbon its breadth contracts to less than 2 miles.

The **Guadiana** rises in the Sierra Morena Mountains in the district of La Mancha. About 10 miles from its source it wholly disappears and flows underground for about a dozen miles. It bubbles up again at a place called Ojos de Guadiana (*the eyes of the Guadiana*), and soon becomes a considerable stream. It drains the southern portion of the central plateau, and forms in two places the boundary line of Portugal. Its total length is about 420 miles, but is not navigable for more than 30 miles above its mouth.

The **Guadalquiver**, under the name of Guadalimar, rises in La Mancha, not far from the source of the Guadiana, and flows through the fine plain of Andalusia. Its general direction is to the south-west, passing Cordova and Seville. Below the latter town it splits into three branches which afterwards unite and form two large islands. These are covered with rich pastures, and support great numbers of horses and cattle. The river enters the sea at San Lucar, after a course of about 320 miles.

The **Segura** rises in the Celtiberian Mountains, and after draining the province of Murcia, and a small portion of Valencia, empties itself into the Mediterranean. Its length is about 200 miles. The **Xucar** or **Jucar** drains the eastern part of New Castile, and then flows through Valencia; its length is about 250 miles, and the area of its basin is equal to that of the Thames. The **Guadalaviar** rises in a small lake not far from the source of the Tagus; its length is about equal to that of the Segura.

The **Ebro** rises in the Cantabrian Mountains, not far from the source of the Pisuerga, a feeder of the Douro. It flows for a considerable distance almost in a straight line to the south-east, and forms the southern boundary of the provinces of Biscay and Navarre. In the neighbourhood of Caspe its course becomes somewhat tortuous, and it enters the Mediterranean by a kind of delta below Tortosa. It receives several important tributaries on the left bank, including the Aragon, Gallego, and Segre; on the right the chief feeder is the Xalon. Its entire length is about 420 miles, and the area of its basin is equal to that of the Tagus, being 34,000 square miles. It is navigable for boats as high as Tudela, but its current is rapid, and its bed in many parts encumbered with rocks and shoals. To avoid these obstacles the Aragon Canal has been constructed from Tudela to Santiago, 40 miles below Saragossa.

Climate and Productions.—The climate of Spain presents great contrasts. In the rugged and hilly district of the north, the temperature is similar to that of Central Europe, and the north and north-west winds bring abundant showers. In the central plateau the air is very dry, and the climate subject to extremes of heat and cold. In the south and south-east there is great heat accompanied by a cloudless sky. The vegetation varies with the climate. In the north we meet with the fruits of England, apples, pears, cherries, and peaches; in the south and south-east, the vine, fig, orange, and olive are cultivated; while the high lands of the centre are destitute of trees, and consist for the most part of extensive sheep pastures. The wild animals include the wolf, bear, boar, lynx, and wild cat. The *lynx* and *bear* are now confined to the Pyrenees; the *wolf* and *boar* are chiefly found also in the north. The *wild bull* roams through the forests of the Sierra Morena. A species of *monkey* is said to be met with in the neighbourhood of Gibraltar.

The climate of Spain, upon the whole, is not very healthy. There are two kinds of wind which are very troublesome: the *gallego*, a north-west wind which comes from Galicia, is cold and piercing, and causes painful affections in the eyes, often ending in blindness. The southern provinces are visited by the *solano*, which relaxes the system, and produces giddiness and inflammation. Spain is remarkably deficient in timber, the inhabitants seem to have a prejudice against trees, especially in the central provinces. The country produces several kinds of oak; besides the English oak, which is grown chiefly in the north, there is the *evergreen oak* which bears edible acorns, in taste resembling chestnuts; the *cork* oak, and the *cochineal* oak. Among other forest trees are tamarisks, chestnut trees, nut trees, and *shumach*, the bark of which is used for tanning. *Chestnuts* form an important article of food with the peasantry. Hazel nuts are very abundant in Catalonia, and immense numbers are annually exported.

Population.—The population of Spain is about 17,000,000. The inhabitants include four distinct races: the *Spaniards*, who form the bulk of the population; the *Basques*, who inhabit Navarre, Asturias, and Galicia, and who probably represent the original inhabitants of the peninsula; the *Morescoes*, descendants of the Moors, who chiefly reside in Granada and Alpujarras; and the *Gitanos*, or gypsies, who are spread all over the peninsula, but are most numerous in the south-east. The gypsies do not stroll about as in England, but generally pursue fixed occupations in towns. The Basques are the most industrious part of the population; the Spaniards proper are proud and indolent.

The government has been very unsettled for a long time, but is at present a limited monarchy; the legislative assembly is called the Cortes. The Roman Catholic religion is the prevailing form of belief, but the clergy have not such great influence as they once had, and monasteries have been suppressed. Education is in a very backward condition, though there are several universities, some of which at one time enjoyed a European celebrity.

INDUSTRY.—Spaniards, of pure blood, despise the arts of industry, and would think themselves degraded were they obliged to engage in agriculture, manufactures, or commerce. Hence every branch of industry is in a backward condition, except in the provinces of Galicia, Asturias, and Navarre. The chief industrial occupation is **agriculture**, but three-fifths of the whole country are devoted to pasturage, and a large portion of the pastures are mere heaths. Wheat is grown to a considerable extent in the northern provinces, and also in Leon, Castile, and Andalusia, but in many parts the quantity raised is insufficient for consumption; maize, rye, and barley are also grown in the north and central districts, and rice in Valencia. In the south and east the vine and mulberry, with various kinds of fruits, are grown.

The soil of Spain is only of medium quality, and requires extensive irrigation. The best cultivated districts, next to the Basque provinces, are in Granada, Murcia, and Valencia. The **wines** of Xeres (sherry), Malaga, and Alicante are celebrated, but with these exceptions, Spanish wines are not equal to those of France. The Arabs introduced a fine breed of horses into Spain, and those of Andalusia are still celebrated, but the number of good horses is rapidly decreasing. Mules and asses are numerous, and remarkable for their size, strength, docility, and sure-footedness. Hogs are bred in vast numbers; but **sheep** are the favourite stock in Spain. Immense flocks of sheep, chiefly of the Merino breed, are pastured during the winter on the plains of Andalusia, Estremadura, Leon, and Castile, and in summer are driven to the nearest mountains.

The **manufactures** of Spain are in a backward condition. Biscay, Catalonia, and Valencia are the most industrious provinces. In the north *tanning* is the chief branch of industry, and the manufacture of *iron* and *hardware* is carried on to a considerable extent. Valencia is celebrated for its *silks* and *cottons;* Catalonia for its *woollen* fabrics; Seville is noted for its Spanish *leather.*

The **commerce** is inconsiderable, and is for the most part in the hands of foreigners. The exports are chiefly wines, wool, silk, lead, quicksilver, salt; oranges, raisins, and other fruits; nuts, olive-oil, cork-wood, and barilla.

Barilla is an alkali obtained from the ashes of certain marine plants It is extensively produced on the coasts of Murcia and Valencia, and is used in glass-works as well as in bleaching and other processes.

The imports consist chiefly of manufactured goods, colonial produce obtained from the West Indies, and salt-fish. Barcelona, Cadiz, Malaga, and Alicante are the chief ports.

The internal communication is very poor. Scarcely any of the rivers are navigable; the roads are bad, and canals few. The Aragon Canal has been already noticed; a more important one is that of Castile, which runs from Segovia northward through Valladolid and Palencia to Aguilar. Above 3000 miles of railway, however, are open. The lines centre in Madrid, and radiate to St. Sebastian, Barcelona, Valencia, Malaga, Seville, and other towns.

DIVISIONS AND TOWNS.—Spain was formerly divided into thirteen provinces, and these are the divisions with which we are most familiar. In 1833, a new division of the country was made. In the following table we give a list of the present divisions, with the chief towns in each, and the ancient provinces with which they correspond; the capital in all cases comes first:—

OLD PROVINCES.	NEW PROVINCES.	TOWNS.
Biscay,	Biscay,	Bilbao.
	Guipuzcoa,	St. Sebastian
	Alava,	Vittoria.
Austrias,	Oviedo,	Oviedo.
Galicia,	Corunna,	Corunna, Ferrol, Santiago.
	Lugo,	Lugo.
	Orense,	Orense.
	Pontevedra,	Pontevedra, Vigo.
Leon,	Leon,	Leon.
	Zamora,	Zamora.
	Salamanca,	Salamanca, Ciudad Rodrigo.
Estremadura,	Caceres,	Caceres.
	Badajos,	Badajos, Merida, Albuera.
Andalusia,	Huelva,	Huelva, Palos.
	Cadiz,	Cadiz, Xeres.
	Seville,	Seville.
	Malaga,	Malaga.
	Cordova,	Cordova.
	Jaen,	Jaen.
	Granada,	Granada.
	Almeria,	Almeria.
Murcia,	Murcia,	Murcia, Cartagena.
	Albacete,	Albacete, Almanza.

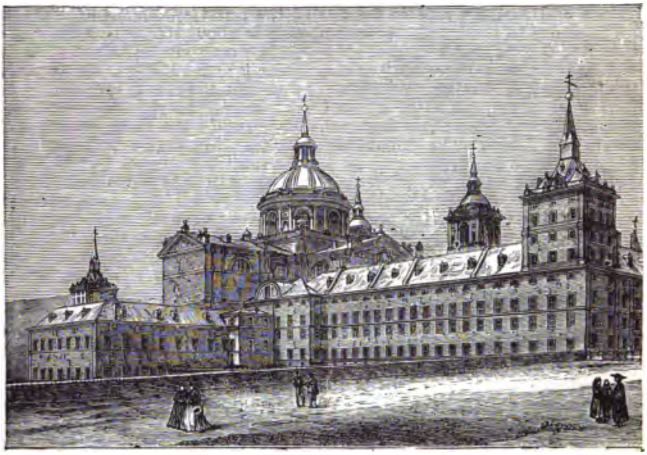
Old Provinces.	New Provinces.	Towns.
Valencia, - - -	Alicante, - - -	Alicante.
	Valencia, - - -	Valencia.
	Castellon de la Plana, -	Castellon de la Plana.
Catalonia, - - -	Tarragona, - - -	Tarragona, Tortosa.
	Lerida, - - -	Lerida, Andorra.
	Barcelona, - - -	Barcelona.
	Gerona, - - -	Gerona.
Aragon, - - - -	Teruel, - - - -	Teruel.
	Saragossa, - - -	Saragossa.
	Huesca, - - -	Huesca.
Navarre, - - -	Navarre, - - -	Pampeluna.
Old Castile, - - -	Logrono, - - -	Logrono.
	Burgos, - - -	Burgos.
	Santander, - - -	Santander.
	Palencia, - - -	Palencia.
	Valladolid, - - -	Valladolid.
	Soria, - - - -	Soria.
	Segovia, - - -	Segovia.
	Avila, - - - -	Avila.
New Castile, - - -	Madrid, - - -	Madrid.
	Guadalaxara, - -	Guadalaxara.
	Cuença, - - -	Cuença.
	Toledo, - - - -	Toledo, Talavera.
	Ciudad Real, - -	Ciudad Real, Almaden.
	Balearic Islands, - -	Palma, Mahon.
	Canary Islands, - -	Santa Cruz, Las Palmas.

Bilbao is celebrated for its defence against the Carlists in 1874. **St. Sebastian** is a place of considerable trade. It is strongly fortified, and was stormed by the English in 1813. **Vittoria**, on the Ebro, is memorable for Wellington's victory in the same year. **Corunna** is a flourishing commercial port; the population is above 20,000. **Ferrol** is one of the three principal naval arsenals in the kingdom: the other two are Cadiz and Cartagena. **Santiago de Compostella** is the seat of a flourishing university, and possesses a magnificent cathedral. **Vigo**, on a fine bay, is a flourishing port. **Salamanca**, on the Tormes, a feeder of the Douro, possesses a university which at one time was the most celebrated in Europe. The battle of Salamanca was fought in 1812. **Ciudad Rodrigo**, on the Agueda, was taken by storm about six months previously. **Badajos**, another strongly fortified town on the Guadiana, was taken after a desperate resistance three months after the capture of Ciudad Rodrigo. **Merida** is chiefly interesting for its Roman remains. **Albuera**, to the south-east of Badajos, was the scene of a sanguinary conflict in 1811, when the French were defeated by the combined armies of England and Spain. **Palos**, now an insignificant place, was the port whence Columbus started on his famous voyage in 1492.

Cadiz, on the Isle de Leon, is strongly fortified, and has a royal dockyard. Its trade with the East and West Indies is considerable, but not so great as formerly; the population is about 72,000. **Xeres de la Frontera**, a town with a population of about 35,000, is celebrated for its manufacture of sherry. *Puerto de la Santa Maria* is the place from which nearly all these wines are exported. **Seville**, on the Guadalquiver, once one of the most splendid cities in the kingdom, has greatly declined in importance. It contains some fine public buildings, especially the cathedral, and it also possesses a university. Its principal manufacture is that of tobacco and cigars, and its chief trade is the export of oranges. The present population is about 152,000. **Malaga**, on the Mediterranean coast, has considerable trade; its chief exports are dried fruits and wine. The population is about 115,000. **Cordova,** on the Guadalquiver, once the capital of the Moorish dominions, is a decayed town, and has been described as "a magnificent museum of antiquities." It is celebrated for its cathedral, which was at one time a Mahommedan mosque. The population is about 45,000. **Granada,** on a feeder of the Xenil, a tributary of the Guadalquiver, stands in the midst of a beautiful plain. It was the late capital of the Moorish kings, and contains the famous *Alhambra,* a palace and fortress, said to be one of the finest specimens of Moorish architecture in existence. Its population is about 100,000. **Murcia,** on the river Segura, has considerable trade in raw, spun, and dyed silks, as well as in fruits and grains. The population is about 110,000. **Cartagena,** founded by the Carthaginians, is a very ancient town, and is described as having been, two centuries before Christ, one of the richest cities in the world. It stands on a fine harbour, and is one of the three great naval arsenals of Spain. The population is 35,000. **Almanza** was the scene of a great battle during the war of the Spanish Succession, in which the allies of the English were defeated (1707). **Alicante** is a place of considerable trade, and exports wine, fruits, and barilla. **Valencia,** near the mouth of the Guadalaviar, is the great centre of the silk trade in Spain. The present cathedral has been successively a Pagan temple, a Christian church, and a Mahommedan mosque. The city possesses a university, and has a population of about 150,000. **Andorra,** in the Pyrenees, is the capital of a small republic under the protection of France. The little state consists of three mountain valleys, watered by affluents of the Segre, with a total area of 190 square miles, and a population of 18,000. The chief products are timber and iron. Andorra, the capital, has a population of about 2000 inhabitants.

Barcelona, the second city in Spain, has important manufactures of silks, woollens, cottons, and shoes. It is the chief port in Spain, and exports iron, copper, cork-wood, wines, and fruits. It contains a university, and the population exceeds 250,000. **Saragossa,** on the Ebro, is a very ancient town, and is said to have been founded either by the Phœnicians or Carthaginians. It is memorable in modern times for the siege in 1808-9 when it held out for seven months against the French. The trade of the town is not so great as formerly, but its population exceeds 80,000. **Pampeluna,** or Pamplona, the capital of the ancient kingdom of Navarre, is strongly fortified. **Burgos,** on a feeder of the Pisuerga, is famed for its cathedral, one of the finest in Europe. In the interior are the tombs of Don Fernando and the Cid. Burgos was once a flourishing city, but its present population is only about 10,000. **Valladolid,** on the Pisuerga, was once the capital of Spain, and is still the chief city in Old Castile. It has a flourishing university, and is the centre of the trade of the province, but its population is only about 20,000.

Madrid, the capital of Spain, stands up the Manzanares, at an elevation of 2200 feet. The city is surrounded by walls about eight miles in circuit, and has rather a gloomy aspect. The surrounding scenery is unattractive, and the climate is subject to great extremes of heat and cold. The population is about 350,000. About thirty miles to the north-west, at the foot of the Sierra de Guadarama, is the village of *Escurial* with the celebrated palace of that name. This edifice which contains a palace, convent, church and mausoleum, is considered one of the most magnificent buildings in Europe. It was commenced in 1563 by Philip the Second, and finished in twenty-two years. It is built in the form of a gridiron, and dedicated to St. Lawrence, who, according to tradition, was broiled alive on a gridiron in the third century. The Escurial contains a fine collection of paintings and a very valuable library. **Toledo,** on the Tagus, was once the capital of the kingdom, and contains a magnificent cathedral. It was once famous for its manufacture of sword blades, but this manufacture has greatly declined. The present population is only about 15,000. **Talavera de la Reina,** a small town on the Tagus, below Toledo, is famous for Wellington's victory in 1809. **Ciudad Real** is the chief town in the district formerly called La Mancha, and is intimately associated with the story of *Don Quixote.*



THE ESCURIAL.

The **Balearic Islands** consist of Majorca, Minorca, Iviça, and some smaller ones. Majorca is hilly, and has an area of 1360 square miles. Minorca is more level, and has an area of 240 square miles. All the islands are fertile, and yield corn and fruits. Iviça produces quantities of salt. *Palma,* on Majorca, is the chief town, and is the seat of a university. *Port Mahon,* on Minorca, is a fortified place with one of the finest natural harbours in Europe.

The **Canary Islands** lie off the north-west coast of Africa, and are of volcanic origin. Teneriffe, the largest, has an area of about 900 square miles, and its peak rises 12,000 feet above the sea. The other islands are all hilly and rugged. The climate is delightful, the soil fertile, and the productions corn, fruits, sugar, tobacco, cotton, silk, cochineal, and barilla. The population is about 200,000. The chief towns are *Santa Cruz,* in Teneriffe, and *Las Palmas* in Grand Canary.

COLONIES.—Besides the Balearic Islands and the Canaries, the following possessions belong to Spain:—

In **Africa.**—Ceuta, a fortress opposite to Gibraltar, and the islands of Fernando Po and Annobon in the Gulf of Guinea.

In the **West Indies.**—Cuba and Porto Rico.

In the **Pacific.**—A portion of the Philippine Islands, and the Caroline, Pelew, and Marianne Islands.

PORTUGAL.

Boundaries and Extent.—Portugal is bounded on the north and east by Spain, and on the south and west by the Atlantic. It extends from 36° 55′ to 42° 8′ north latitude, and from 6° 15′ to 9° 30′ west longitude. Its extreme length from north to south is 365 miles; its average breadth about 100 miles; and it contains an area of 34,500 square miles.

The boundary line between Spain and Portugal is for the most part an artificial one, though the rivers Minho, Douro, and Guadiana each form a boundary for a short distance. The Azores and Madeira are included in the provinces of Portugal, and if these islands be taken into account, the total area of the kingdom will exceed 35,000 square miles.

Coast-Line.—The coast of Portugal is for the most part bold and rocky, though, south of Lisbon, the Bay of Setubal is lined with salt marshes. Commencing at the mouth of the Minho the coast-line runs in almost an unbroken line to Cape Roca. The only exception being the spacious Bay of Aveiro, which, however, has a bar of shifting sand at its entrance. **Cape Roca** is the most westerly point in the continent of Europe, and as it terminates a range of mountains it is bold and rocky. The mouth of the Tagus is about a mile wide at its entrance, but it afterwards expands into a broad estuary about seven miles in width and forms a magnificent harbour. A little to the south is **Cape Espichel**, at the mouth of the Bay of Setubal. From the bay the coast runs almost due south to Cape St. Vincent, near which the English gained a great naval victory in 1797. **Cape St. Vincent**, like Cape Roca, is the termination of a mountain chain, and is high and rocky. The coast now runs eastward to the mouth of the Guadiana. It is not generally high, and for some distance is skirted with low islands. The total length of coast-line is about 500 miles.

Surface and Minerals.—Portugal forms a portion of the plateau of Spain, and slopes gently to the west. The Castilian Mountains, which cross the plateau, are continued through Portugal under the name of **Sierra de Estrella**, and terminate in Cape Roca. Their culminating peak reaches a height of

7524 feet. The mountains of Toledo also enter Portugal, but do not rise to any great elevation, and do not reach the sea-coast. In the south, however, the **Sierra de Manchique**, an extension of the Sierra Morena, forms a well-defined chain, and terminates in Cape St. Vincent. There are a great number of inferior chains in other parts of the country, and to the north of the Douro the country is especially rugged.

Portugal, like Spain, is rich in minerals, but there are very few mines. In ancient times the Tagus was famous for its golden sands, and the quantity of the precious metal to be obtained by washing the sands of some of the rivers is said to be still considerable. One small gold mine is wrought near Setubal. **Coal** is found near Oporto and elsewhere, and iron, lead, and plumbago are abundant. Large quantities of superior **salt** are produced by evaporation in bays along the coast, and beautiful **marbles** and good building stone are dug out of the mountains.

RIVERS.—The chief rivers are the lower courses of the Minho, Douro, Tagus, and Guadiana, with the Mondego.

The **Tagus** enters Portugal a little below Alcantara, and for about twenty miles it forms the boundary line between Portugal and Spain. Its course from Alcantara to Abrantes is south-west, and immediately below Abrantes it is joined on the right bank by the Zezere, a deep and rapid stream, which has its source in the Sierra de Estrella, and flows along the eastern base of that ridge. From this point the Tagus is navigable for vessels of considerable size, but the channel of the river is obstructed in many parts by islands. Lisbon has a magnificent harbour, the entrance to which is a narrow channel, bounded on each side by rocky cliffs. The **Mondego** rises in the Sierra de Estrella not far from the source of the Zezere, but it drains the opposite side of the range and enters the sea after a course of about 115 miles.

CLIMATE AND PRODUCTIONS.—The climate of Portugal is warmer than that of Spain, but more agreeable owing to its being subject to less extremes. In the hilly districts of the north the air is keen, and snow falls heavily on the mountains. Snow seldom lies on the low grounds, but the rains in winter are often heavy. The valley of the Mondego is remarkable for its humidity. The soil, upon the whole, is more fertile than in Spain. Wheat, barley, oats, flax, and hemp are grown in the high grounds, the vine and maize where the temperature is warmer, and rice in the low grounds; the chief fruits are the olive, orange, and lemon. Woods are extensive: in the north there are forests of *oak;* in the central provinces, *chestnuts;* in the south, the *cork* tree. The province of Algarve produces the date and the American aloe. The wild animals are similar to those of Spain.

PEOPLE AND INDUSTRY.—The population of Portugal, including the Azores and Madeira, amounts to 4,400,000. The people are of the same race as the Spaniards and speak a dialect of the same language, but the two nations have a deep-rooted antipathy to each other.

In the northern and mountainous districts the peasants are active and spirited, but in other parts they are indolent, dejected, dirty, and ill fed. Their ordinary food consists of coarse bread, dried fish, cheese, garlic, chestnuts, and olive oil.

The government is a limited monarchy, the Legislative Assembly being called the Cortes. The established religion is Roman Catholic, but the clergy are not so numerous as formerly, and the monasteries have been suppressed. The Patriarch of Lisbon is the metropolitan of the church, and there are two archbishops, those of Braga and Evora. Education is in a very backward state, and there is only one university, that of Coimbra. The army consists of about 34,000 men in time of peace, and the navy of 38 ships—many in bad condition, and scarcely sea-worthy.

Agriculture is in a more backward condition even than in Spain, and the produce of corn is insufficient for the wants of the country. The chief article of cultivation is the *vine*, and the vineyards of the Douro furnish the finest qualities of port which receives its name from Oporto, the place of exportation. *Rice* is grown in the marshy grounds that adjoin the Tagus, and along the coast of Algarve. Horses are scarce, oxen being commonly used for draught; but mules are numerous, and of an excellent breed.

The **manufactures** are of little importance, and consist chiefly of coarse woollens, cottons, linens, silks, glass, and jewellery. There are few manufacturing establishments, each family, especially among the peasantry, supplying its own consumption. The exports consist of wine, fruits, oil, cork, and salt. The wine trade is principally in the hands of English merchants, and it centres in Oporto. The imports are chiefly manufactured goods, corn, dried fish, salt meat, and colonial produce.

The internal trade is inconsiderable. There are no canals, the navigation of the river is interrupted by rocks and shallows, the roads are bad, and railways few.

DIVISIONS AND TOWNS.—Portugal is divided into eight provinces. We give below the names of these with the chief towns in each:—

PROVINCES.	TOWNS.	PROVINCES.	TOWNS.
Minho, ...	Braga, Oporto.	Alemtejo,......	Evora, Elvas.
Trasos Montes,	Braganza, Villa Real.	Algarve, ...	Fago, Tavira.
Beira, ...	Coimbra, Almeida.	The Azores, ...	Angra, Ponte Delgada.
Estremadura,	Lisbon, Setubal, Santarem.	Madeira, ...	Funchal.

Braga, the capital of the province of Minho, is a thriving town with a population of about 16,000. **Oporto** (*the port*), the second city in Portugal, stands about two miles from the mouth of the Douro. It has some manufactures of hats, silks, linen, and pottery, but it chiefly depends on the wine trade. The population is about 80,000. **Braganza** gives its name to the present royal family of Portugal: in 1640 John, duke of Braganza, ascended the throne, and his descendants still enjoy the crown. The town is the capital of the province and the seat of a bishopric, but its population does not reach 4000. **Coimbra**, on the Mondego, is the seat of a university, the only one in Portugal. Earthenware of good quality is produced here, with woollen and linen cloths. It stands on the railway from Lisbon to Oporto, and has a population of about 15,000. **Almeida**, on a feeder of the Douro, is a fortified frontier town. It was taken by the French under Massena in 1810, who abandoned it the following year, after blowing up the fortifications.

LISBON.

Lisbon, the capital of Portugal, stands near the mouth of the Tagus. The city, built on an amphitheatre of hills, has a splendid situation, and, when viewed from the harbour, has a fine appearance; but many of its streets are narrow and filthy. The earthquake which happened here in 1755 destroyed 60,000 people. The portion of the town then destroyed was afterwards rebuilt, and contains some of the best streets. The present population is about 280,000. The entrance to the river is defended by the strong castle of Belem which stands at the entrance of the Tagus, where the river is only about a mile wide. A few miles to the north-west of Lisbon is *Cintra*, remarkable for its agreeable climate and the beauty of its scenery. *Vimeira* lies some distance to the north, and almost midway between is the town of *Torres Vedras*, famous for the lines of defence constructed by Wellington in 1810.

Santarem was once the seat of the court of Portugal, but after its removal to Lisbon in the 15th century, the town went to decay. It still, however, possesses some trade. **Setubal**, upon the north side of a large bay, exports wine, fruits, and salt. The population is about 15,000. **Elvas** is a strong frontier town: it was of great assistance to Wellington during the siege of Badajoz.

The **Azores** are a volcanic group of islands situated in the Atlantic, about 800 miles from the coast of Europe, and between the parallels of 36° and 40° north latitude. The climate is mild and healthy, but the group is subject to severe earthquakes. The principal exports are oranges and lemons, sent chiefly to England; wheat and maize to Portugal; wine and fruits to the United States and the north of Europe. The imports are chiefly manufactured goods from England. The two principal islands are Terceira and St. Michael. *Angra*, on the former, is the seat of government, and has a population of 13,000. *Ponte Delgada*, on St. Michael, is the chief centre of trade, and has a population of 16,000. The population of the whole group is about 215,000.

The **Madeiras** include Madeira Island and a number of small rocky islets. The group, lying about 400 miles from the coast of Morocco, is a mass of basaltic rock rising abruptly from the Atlantic. It has an area of nearly 300 square miles, and its highest point is 6000 ft. above the sea. The climate is remarkably equable, and hence it is a great resort for invalids. The chief produce is wine. Chestnuts, which grow abundantly on the mountains, form the chief food of the peasantry. *Funchal*, the capital, has a population of 25,000.

COLONIES.—Besides Madeira and the Azores, Portugal possesses many other dependencies, though her foreign possessions are by no means so extensive as they once were. The chief of these, arranged under the different continents, are:—

Africa.—Cape Verde and Bissagos Islands off the west coast; St. Thomas and Princes Islands in the Gulf of Guinea; Angola, Benguela, Mozambique, and other territories on the mainland.

Asia.—Goa, Damaun, and Diu on the coast of Hindostan; Macao, near Hong Kong, and a portion of Timor in the East Indies.

ITALY.

Boundaries and Extent.—Italy is the second of the three peninsulas which are found in the south of Europe. It is bounded on the north by the Alps, which separate it from France, Switzerland, and Austria; on the west and south by the Mediterranean; and on the east by the Adriatic. Its length from north to south is about 700 miles; its average breadth, about 100 miles; and its area, including the islands of Sardinia and Sicily, is about 114,400 square miles.

In the north of Italy the breadth is 350 miles, while in the south it is diminished to less than twenty miles. Corsica naturally belongs to Italy, but politically it is connected with France.

Coast-Line.—In shape Italy is not unlike a boot, the heel being formed by the peninsula of Otranto, and the toe by the district of Calabria; between, is the large gulf of Taranto. The coast-line is extensive, but not much indented, and on the eastern side there is a great deficiency of good harbours. The western and southern shores are rocky, except the tract extending from the mouth of the Arno to the town of Terracina, and some salt marshes in the neighbourhood of Taranto. The eastern shore is low and sandy, almost destitute of good harbours, and bordered by dangerous shoals.

Commencing with the Gulf of Genoa, we find a bold and rocky shore caused by the proximity of the Apennines to the sea. But from the neighbourhood of Pisa southward, for a distance of 200 miles, a level plain lies along the shore. The small island of **Elba** has productive iron mines, and is interesting as being the prison of Napoleon for a short period previous to the famous "Hundred Days." Following the coast to the south-east, we pass the mouth of the Tiber, and reach the Gulf of **Gaeta**, to the south of which is the famous Bay of Naples, with the islands of **Ischia** and **Capri** in front. A peninsula, terminating in **Point Campanella**, separates the Bay of Naples from the Gulf of Salerno The **Lipari** Islands, off the north coast of Sicily, are of volcanic formation, and one of them, Stromboli, is in a state of almost constant activity. Passing through the strait of Messina, which separates Sicily from Calabria, we round **Cape Spartivento**, and proceed northward to the Gulf of Squillace. Passing the Gulf of Taranto, we round **Cape di Leuca**, and shortly afterwards reach Brindisi, a great port of embarkation for the East. We next reach the Gulf of Manfredonia and **Point Gargano**, and then there is little of interest or importance until we arrive at Venice. From Ravenna to Trieste the land is gaining upon the sea, mainly through the mud brought down by the rivers. *Adria*, which was once a famous port, and gave its name to the Adriatic, is now about 15 miles from the coast; and the whole shore of the Gulf of Venice is said to have advanced from 2 to 20 miles since the commencement of the Christian era.

SURFACE.—The **Alps**, which surround the north of Italy, present their steep slopes to the south, and hence most of the glaciers are in Switzerland. The portions of the chain between Austria and Italy are known as the *Carnic* and *Rhœtian* Alps; between Italy and Switzerland, the *Lepontine* and *Pennine* Alps; and between Italy and France, the *Graian*, *Cottian*, and *Maritime* Alps. The Maritime chain is continued eastward by the Apennines, and thus encloses the Plain of Lombardy. The **Apennines** then run southward through the centre of the peninsula, and when in the latitude of Naples divide—one branch proceeding south-east to Cape di Leuca, and the other and higher branch running south-west to Cape Spartivento. A spur from the main chain also forms the promontory of *Monte Gargano*. On the eastern side of the Apennines is a long narrow plain which stretches along the shores of the Adriatic; on the western side there is a broad plain known in different parts as the *Maremma*, the *Campagna di Roma*, and the *Pontine Marshes*. The valleys on the east side of the Apennines are at right angles to the general direction of the chain; those on the west run parallel with it. Hence the longer rivers are on the western side. The culminating peak is *Mount Corno*, about the middle of the chain, which attains an elevation of 9500 ft. **Vesuvius**, the only active volcano on the mainland of Europe, is an isolated summit rising 3932 ft. in height.

The Pennine Alps are the loftiest in the whole chain, and contain the summits of Mont Blanc, Great St. Bernard, Matterhorn, and Monte Rosa. **Mont Blanc**, generally considered the highest summit in Europe—though Elburz, in the Caucasus Mountains, is 3000 ft. higher—rises to a height of 15,780 ft., and **Monte Rosa** is only 500 ft. less in elevation. Monte Cervin, or the **Matterhorn**, has a steep craggy summit which it is exceedingly difficult to ascend. The **Great St. Bernard** is famous for its monastery and the fine breed of dogs kept there. The *passes* across the Alps are all at a great elevation. Formerly one of the most frequented was that of *Mont Cenis*, 6772 ft. in height, but the mountain is now pierced by a railway tunnel 8 miles in length. The pass of Great St. Bernard exceeds 8000 ft. in elevation, and that of *Mont Cervin*, the highest in Europe, is 11,000 ft. in height, but cannot be used by carriages. The *Simplon Pass*, near the commencement of the Lepontine Alps, is crossed by a great military road constructed by Napoleon: it is 6585 ft. in height.

The *Splugen*, further eastward, has about the same elevation, but the *Stelvio Pass*, which leads from Lombardy into Tyrol, exceeds 9000 ft., and is the highest carriage road in Europe.

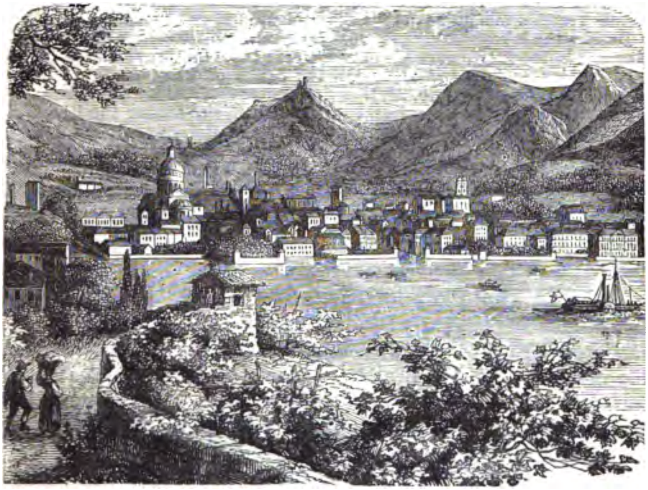
MOUNT VESUVIUS.

The *Plain of Lombardy*, enclosed by the Alps and Apennines, has an area of 18,000 square miles, and is of great fertility. The whole is well wooded, and it has been termed the garden of Europe. The plain which lies on the western side of the Apennines is very different in character. It is exposed for the most part to the malaria, and in certain seasons of the year is almost uninhabitable. The consequence is that it is chiefly devoted to pasturage, and in the summer months the shepherds, who have charge of the flocks which feed on the *Pontine Marshes*, are obliged to withdraw to the towns on the approach of evening, as a night spent in the country would be fatal. The country round Naples, however, is free from the malaria, and is of extraordinary fertility. On the shore of the Adriatic there is the large Plain of *Capitanata* or Apulia, having Foggia for its centre. The country here is not very fertile, and is deficient in moisture, but there are some extensive pastures in its northern parts.

Italy is not very rich in minerals: the centre is the chief seat of mining industry. *Iron* is found in Elba and in other parts. Great quantities of *borax* are found in Tuscany, and *sulphur* is obtained from the volcanic districts. The most valuable mineral product, however, is *marble*, the finest of which comes from Carrara, a town lying about 40 m. to the north of Leghorn. Hot springs are common in many districts.

RIVERS AND LAKES.—Italy is a well-watered country, and has numerous lakes as well as rivers. The chief rivers are the Po, Adige, Arno, and Tiber. Besides these may be mentioned the *Tagliamento*, *Piave*, and *Brenta*, which flow into the Gulf of Venice; the *Ombrone* in Tuscany; and the *Volturno* in Campania.

The **Po** rises at Monte Viso, in the Cottian Alps, and after flowing some distance to the east turns northward, and passing Turin is joined by the Dora Baltea, which rises at the foot of the Little St. Bernard. It now flows eastward and is joined by the Sesia, and then making a bend to the south receives the waters of the Tanaro. This feeder rises in the Maritime Alps, and flows at first north and then east, passing the town of Alessandria. The next important tributary is the Ticino, which rises near Mount St. Gothard, and flows through *Lake Maggiore*. This lake is about 40 miles long, and has an average breadth of two or three miles. It is very deep in some places, and its waters are clear and well stocked with fish. The scenery is varied: the upper part is surrounded by steep and lofty mountains; towards the east and south these elevations decline, but the scenery is still beautiful.



LAKE COMO.

Following the main stream eastward, we next meet with the confluence of the Trebbia, a stream which joins the Po on the right bank, and is famous for the great victory gained on its banks by Hannibal (B.C. 218). We next meet with the Adda, on the left bank, which rises near the Stelvio Pass, and flows south and then west into the *Lake of Como*. This lake is surrounded by precipitous mountains, and the higher part of it stretches up towards the gloomy pass of the Splugen. Towards the south it divides into two branches, and at the southern extremity of the western arm stands the town of Como from whence the lake derives its name. The Adda joins the Po a few miles above Cremona, and the river continues to flow in a general direction to the east until its embouchure in the Adriatic. In this portion of its course it is joined by the Oglio and Mincio on the left, and by the Secchia and Panaro on the right bank.

The Mincio leaves the *Lake of Garda* at Peschiera, and passes Mantua, the birthplace of Virgil. Peschiera and Mantua are fortified towns. The Po empties itself by a delta after a course of about 450 miles, and it drains an area equal to about four-fifths the area of England.

To prevent inundations through the melting of the snow on the Alps and Apennines, the Po and many of its tributaries are protected by artificial embankments: and such is the quantity of solid matter carried down by the stream, that its channel in some parts has been considerably raised; and it is said that at Ferrara the surface of the river is actually higher than the roofs of the houses. A great deal of the fine sand and mud, however, is carried down to the sea, and enlarges the delta which has grown considerably during the last 2000 years.

The **Arno** rises in the Apennines, and flows westward past Florence and Pisa, through a beautiful and well-cultivated valley. Its total length is about 150 miles. The **Tiber** rises not far from the source of the Arno, and flowing to the south-west pours its waters into the Mediterranean after a course of 210 miles. One of its chief feeders is the Teverone, on which stands Tivoli, a famous resort for the ancient citizens of Rome.

Besides the lakes already mentioned, there are three others of considerable size in the neighbourhood of the Tiber: these are *Trasimeno* or Perugia, *Bolsena*, and *Bracchiano*. On the banks of Trasimeno, Hannibal gained a great victory (B.C. 217).

The **Adige** is formed by several streams which rise among the Rhætian Alps in the Tyrol, and it flows eastward as far as Botzen or Bolsano. The river now flows directly to the south and passes Trent, where the famous council was held in the 16th century. It then bursts through the Carnic Alps and enters Italy. Its course is now south-east to the sea, which it enters after a course of 250 miles. Upon the Adige stand Verona and Legnago, which were strongly fortified when Austria held Venetia, and which together with Peschiera and Mantua formed the famous "Quadrilateral."

CLIMATE AND PRODUCTIONS.—The climate of Italy is delightful, being warm and dry, and with the exception of certain districts on the west coast, and in marshy tracts near the mouth of the Po, healthy. The atmosphere is clear and transparent, and the sky intensely blue. In winter the lakes of Garda and Maggiore, and the lagoons of Venice are partially frozen, and snow often falls in Lombardy. Here the mulberry and vine flourish, and rice is cultivated. In central Italy snow and ice are for the most part confined to the mountains, and the orange, olive, and lemon grow freely in the valleys. In the extreme south, snow and ice are unknown, and the vegetation is almost tropical, and includes the sugar-cane, Indian fig, and date-palm. During summer the heat here is intense, and the *sirocco*, a hot wind from Northern Africa, produces an unwonted languor in the human frame, and causes vegetation to droop. The forests, chiefly confined to the mountain regions, are not very extensive; the *chestnut* is one of the most common trees, and its fruit forms an important article of food among the peasantry. Among the wild animals found in the forests are the wolf, lynx, stag, marmot, and badger; and in the south, the wild boar and the porcupine.

The general aspect of the country is marked by beauty and variety. The mountains exhibit every variety of form and elevation, including gentle slopes, rugged peaks, deep chasms, and steep precipices; and the effect is heightened by the rich vegetation which clothes their sides when contrasted with their snowy summits. Many of the valleys also, especially that of the Arno, are exceedingly picturesque. The size and number of the lakes, as well as the extent of coast-line, add to the charm of the landscape, while the transparent clearness of the atmosphere gives to every object a brightness of colour and distinctness of outline which can hardly be conceived by the inhabitants of more northern lands. But this delightful scenery and delicious climate is not without its drawback. It encourages, if it does not induce, slothful habits, and makes the people less industrious than those who dwell where the climate is more bracing and severe.

PEOPLE.—The population of Italy is nearly 27,000,000. Lombardy, the most populous part of the country, has an average of 365 to a square mile. The Italians, like the English, are a mixed race of people, being descended from the various tribes who have at different times overrun the country. They, however, possess a uniformity of appearance, manner, and habits which mark them out as a distinct nation. Their language is based upon the ancient Latin, but there are numerous dialects which differ widely from each other. The Tuscan dialect is the most refined and harmonious, and is that spoken by the educated classes in all parts of the peninsula.

The government is a limited monarchy, consisting of a king and two chambers similar to the two Houses of Parliament in this country. The great bulk of the population are Roman Catholics, but three mountain valleys near Monte Viso are inhabited by the Waldenses, who long struggled for freedom of conscience, and have at length obtained it. Until recent years, education was almost unknown among the lower classes, but elementary and normal schools have now been established. Universities are numerous, and are found in all the principal cities; but they are not so famous as they were during the middle ages. There are also several important schools and other institutions established for the promotion of the fine arts. Some of the most celebrated of these are at Rome, Florence, and Bologna. Italy has long been famous for its cultivation of painting, sculpture, and music. It has also been noted for its numerous beggars and daring brigands.

INDUSTRY.—Agriculture is the chief employment of the people; but, except in the north, it is carried on with little skill. Piedmont, Lombardy, and Venetia are chiefly engaged in the growth of the *mulberry*, and in the cultivation of corn, including rice. It is said that in Lombardy upwards of 17,000,000 trees are required as food for the silk worms. Tuscany is famous for its *olives* and other fruits. Large numbers of cattle and sheep are fed upon the pastures of the Maremma and Campagna. In the volcanic district round Naples, the *vine* is extensively cultivated and this region produces the famous wine called "Lachryma Christi." In Calabria large herds of hogs are fed in the forests. Throughout the country oxen are used for the plough, and in some districts buffaloes. The buffalo is not found in any other country of Europe, except Greece.

The **manufactures** of Italy are not of great importance. The principal one is that of *silk*, and its chief seat is in Lombardy; coarse woollen and linen goods are also made here and in other parts of the country. Cotton fabrics, straw-plait, straw-hats, gauze, artificial flowers, paper, parchment, glass, porcelain, and musical instruments are among the other goods manufactured in Italy, but the making of these is only carried on to a limited extent.

The foreign trade of Italy is very considerable, and is carried on chiefly with England. The exports include raw silks, rice, wines, fish, fruits, sulphur, marble, olive oil, straw-plait, cork, and coral. The imports are manufactured goods of all kinds, colonial produce, refined sugar, and coal. The chief ports are Genoa, Leghorn, Civita Vecchia, Ancona, and Venice; with Palermo, Messina, and Marsala in Sicily.

The roads in the north of Italy are good; but in Central and Southern Italy are very defective. About 3000 miles of railway have been opened, and the railway system is making rapid progress throughout the peninsula. Italy has railway communication with France by means of the Mont Cenis tunnel, and the mails between Great Britain, India, and Australia are carried by this railroad, *via* Brindisi, every week.

NATIONAL DIVISIONS.—Previous to the year 1859, Italy was divided into several kingdoms; but in that year Victor Emmanuel, king of Sardinia, obtained Lombardy, Parma, Modena, and part of the Pontifical States. In the following year Tuscany, the Marches, Umbria, and the Two Sicilies were added; and in 1861 these were all united under the title of Kingdom of Italy, with the seat of government at Florence. In 1866, Venetia was added, and finally the remainder of the Papal States were annexed in 1870, and

Rome became the capital. The kingdom is now divided, for administrative purposes, into 69 provinces, which, as a general rule, take their names from the chief town in each. The ancient divisions, however, are still retained on the map, we therefore give a list of these, with the more important towns in each division.

PIEDMONT—Turin, Genoa, Alessandria, Asti, Novara.
LOMBARDY — Milan, Pavia, Cremona, Mantua, Brescia, Bergamo, Como.
VENETIA—Venice, Padua, Verona, Vicenza, Treviso.
EMILIA — Bologna, Ravenna, Ferrara, Modena, Reggio, Parma, Piacenza, Carrara.
TUSCANY—Florence, Leghorn, Pisa, Lucca, Arezzo, Siena.
UMBRIA—Perugia.
THE MARCHES—Ancona, Pesaro, Ascoli.
ABRUZZO AND MOLISE—Chieti, Teramo, Aquila, Campobasso.
ROMAN TERRITORY—Rome, Viterbo, Civita Vecchia.
CAMPANIA—Naples, Salerno, Benevento, Gaeta.
APULIA—Bari, Foggia, Taranto, Brindisi.
BASILICATA—Potenza.
CALABRIA—Reggio, Cantanzaro, Cosenza.

Turin stands on the left bank of the Po in the midst of a well-cultivated plain. The staple business is the manufacture of silk, and the city is the seat of a university. The population is 207,000. **Genoa**, beautifully situated on the verge of a semicircular bay, though not so flourishing as it once was, still possesses considerable trade. It exports olive oil, fruits, silks, and velvet. The population is about 130,000. Genoa is said to have been the birthplace of Columbus. **Alessandria**, at the junction of the Tanaro and Bormida, was founded by Pope Alexander III. in the 12th century, and is a place of great strength. The town is famous for its manufactures of silks, linen, and wax candles, and has a population of about 60,000. A short distance to the east of Alessandria is the battle-field of *Marengo*, where Napoleon gained a victory over the Austrians, after his famous passage across the Alps (1800). **Asti**, on the Tanaro, lies to the west of Alessandria, and is celebrated for a sparkling white wine. Alfieri, the poet, was born here in 1749.

Milan stands on a beautiful plain, between the Ticino and Adda, "in a sea of green trees." It is one of the finest cities in Italy, and contains a magnificent cathedral. It is the centre of the silk trade of Lombardy; the population is about 200,000 **Pavia**, on the east bank of the Ticino, was the ancient capital of the Lombard kings. In 1525, a great battle was fought here, when Francis I. was defeated and taken prisoner. Pavia has considerable trade in agricultural produce, and large quantities of Parmesan cheese are manufactured in the neighbourhood. Its population is about 30,000. To the north-east of Pavia, on the banks of the Adda, is *Lodi*, where Napoleon gained a great victory in 1796. This town is also famous for its Parmesan cheese. **Cremona**, on the left bank of the Po, was once famous for its violins, but the manufacture is now decayed.

Cremona is about the same size as Pavia. **Mantua** is a fortified town, and has also considerable trade; it was the birthplace of Virgil (B.C. 70). **Brescia,** to the north-west, is a place of considerable trade, with manufactures of silk and fire-arms. About midway between Mantua and Brescia is *Solferino*, where Napoleon III. defeated the Austrians in 1859. *Magenta*, where another victory was obtained the same year, lies to the west of Milan, near the left bank of the Ticino.

Venice was founded in the year 452 by the inhabitants of the coast, who fled at the approach of the famous Attila. The city is built on a number of low islands, and is completely intersected by canals. The Grand Canal is crossed by a famous bridge called the *Rialto;* another, which led from the prison to the place of execution, was called the *Bridge of Sighs*. The usual mode of conveyance in Venice is by means of gloomy-looking covered boats called gondolas. Many of the palaces and other public buildings are fine, especially the cathedral of St. Mark, which is remarkable for the richness of its materials and the profusion of ornament. Venice has not such a large commerce as it once possessed, but it still has important manufactures of glass and jewellery, and shipbuilding is carried on to some extent. The population is about 130,000. **Padua,** to the west of Venice, possesses a university which, in the 15th and 16th centuries, had great celebrity. It is a busy commercial town, and has a population of 66,000. **Verona,** on the Adige, is also a place of considerable trade, and it occupies a strong military position. Its population is about the same as that of Padua. **Vicenza,** to the north-east, has extensive silk manufactures.

Bologna has considerable manufactures of glass, silk, and musical instruments. It is famous for its ancient university. The population exceeds 100,000. **Ravenna,** to the south-east, formerly stood upon the coast, but is now several miles inland. It contains the tomb of the poet Dante, who died 1321. The population of Ravenna is about 60,000. About 20 miles to the south is the small stream called the Fiumicino, supposed to be the ancient *Rubicon*, the boundary between ancient Italy and Cisalpine Gaul. An ancient law of Rome made it death to cross this river, in arms, with a hostile intention. The passage by Cæsar has become a proverb. **Ferrara,** near the south bank of the Po, is a decayed town, though it has a population of about 70,000. The house in which Ariosto resided, and the cell in which the poet Tasso was imprisoned, are still pointed out. **Parma,** on a small river of the same name, a feeder of the Po, is a well-built town, and possesses a university. **Piacenza,** or **Placentia,** stands on the right bank of the Po, near the junction of the Trebbia. Under the Romans it was a very strong place, and afforded them a secure retreat after the battles of *Ticinus* and *Trebbia* (B.C. 218). **Carrara,** on the western declivity of the Apennines, and not far from the coast, is celebrated for its marble quarries.

Florence, on the Arno, is a beautiful city built in a delightful district, and is celebrated for its collections of paintings and sculpture. It has produced, perhaps, a greater number of celebrated men than any other city in Europe; among these may be mentioned Dante, Petrarch, Boccaccio, Michael Angelo, Leonardo da Vinci, and Galileo. The present population is about 170,000. **Leghorn** (or *Livorno*), a little south of the mouth of the Arno, is one of the chief ports of Italy. It has a fine harbour between the island of Melora and the mainland. The chief exports are silks, straw-hats, and straw-plait, olive oil, fruits, wine, and borax. Shipbuilding is also largely carried on. The population is about 100,000. **Pisa,** a few miles from the mouth of the Arno, is a university town, and it is noted for its famous leaning tower. The population is 50,000. **Ancona**

is the chief commercial port on the Adriatic. It has a population of 36,000. A little to the south is *Loretto*, famous for the holy house, which, it is pretended, was brought from Nazareth by angels. *Urbino*, to the north-west of Ancona, was the birthplace of Raphael (1483). A little further north is *San Marino*, the capital of a small independent territory, which has an area of 22 square miles, and a population of about 8000.

FLORENCE.

Rome, the capital of Italy, stands about 16 miles from the mouth of the Tiber. It is celebrated alike for its present buildings, and for the ruins of its ancient grandeur. Among the former are the cathedral of *St. Peter's*, perhaps the finest ecclesiastical structure in the world; and the palace of the *Vatican*, in which the Pope resides, and which is celebrated for its magnificent library, and for its splendid collections of works of art. Among the remains of antiquity may be mentioned the *Colosseum*, an immense amphitheatre capable of holding 80,000 people. The present population of Rome is about 150,000.

Naples, the largest city in Italy, stands on the sides of a semicircular bay, and has perhaps the finest situation of any town in Europe. The ground rises from the shore up the slope of hills clothed with groves of orange, lemon, and other fruit trees; and in the background are the snow-capped Apennines. As nearly all trades and amusements are carried on in the open air, the streets swarm with people, among whom the *lazzaroni*, or professional beggars, are particularly numerous. The population is about 450,000. In the neighbourhood, on the south-east, rises Mount Vesuvius, at the foot of which are the remains of the ancient cities of *Pompeii* and *Herculaneum*, which were buried in ashes during a memorable eruption in A.D. 79. **Salerno** was famous during the middle ages for its school of medicine. **Gaeta**, on a bay of the same name, is strongly fortified, and is of some commercial importance. **Bari**, a seaport on the Adriatic, has a population of 50,000. To the north-west, near Canosa, Hannibal gained the victory of *Cannæ* (B.C 216). **Brindisi**, since the opening of the Mont Cenis tunnel, has become a place of considerable importance as a packet station. **Reggio**, or Rhegium, is mentioned in the history of St. Paul (Acts xxviii. 13).

ISLANDS.—**Sicily**, the largest island in the Mediterranean, has an area of more than 11,000 square miles. It is triangular in shape, the three chief headlands being Capes Faro, Passaro, and Boeo. A range of mountains, which may be looked upon as a continuation of the Apennines, runs through the northern part of the island from east to west, and attains in *Monte Madonia* an elevation of 6000 ft. At this point a spur runs off to the south and terminates in Cape Passaro. *Mount Etna*, which attains an elevation of nearly 11,000 ft., is an isolated summit. The soil of the island is fertile and watered by numerous streams, and the vine and other fruits of southern Europe flourish abundantly. The chief towns are Palermo, Messina, Catania, Siragusa, Marsala, and Trapani.

Palermo, the chief town in the island, stands on the north coast, and is a place of considerable trade: it also possesses a university. The population is about 220,000. **Messina**, on the channel which separates Sicily from the mainland, is also a place of great commercial activity, and its environs are the most thickly populated part of the island. Its population is about 112,000. Further south, and at the foot of Mount Etna, is **Catania**, which is a place of some importance, and has silk manufactures; the population is 84,000. Still further south is the small town of **Siragusa**, built among the extensive ruins of the ancient Syracuse. **Marsala**, on the extreme west of the island, is famous for its wine; the population is 34,000. About 20 miles to the north is **Trapani**, a town of about equal size, the inhabitants of which are chiefly engaged in an important coral fishery.

Sardinia ranks next to Sicily in size among the islands of the Mediterranean, and has an area of about 9400 sq. m. In the interior several ranges of mountains run through it from north to south, but the highest summit scarcely exceeds 6000 ft. The soil in general is fertile, but there are some marshy tracts on the western side of the island. About one-third of the surface is covered with forest; another third is laid out in corn-fields, vineyards, and olive plantations, and the produce is of a superior quality. The two chief towns are *Cagliari* and *Cassari*, each with a population of about 32,000, and each possessing a university. Cagliari, at the head of a fine bay on the south coast, is a place of considerable trade.

SWITZERLAND.

Boundaries and Extent.—Switzerland is bounded on the north by Germany; on the east by Germany and Austria; on the south by Italy; and the west by France. Its greatest length from east to west is 208 miles; its extreme breadth about 156 m., and it comprises a total area of nearly 16,000 sq. miles.

The Rhine separates Switzerland from Germany; the Jura Mountains from France; and the Alps from Italy. Switzerland is the only country in Europe that possesses no coast-line.

Surface and Minerals.—About two-thirds of the country is covered by lofty mountains, and the remainder consists of a plain with an elevation of about 1300 ft. This plain extends from north-east to south-west, and separates the Jura Mountains from the Alps.

The **Alps** of Switzerland consist of two main divisions: the Higher Alps, which consist of the Pennine and Lepontine chains, and form the boundary on the side of Italy, and the Bernese Alps, which are wholly in Switzerland. These two divisions unite in the huge mountain mass of **St. Gothard**; and from this centre various other ranges diverge and spread over the east and south-east of the country. In the Higher Alps are the summits of Great St. Bernard, Monte Rosa, and the Matterhorn; while in the Bernese Alps, **Finsteraarhorn** and **Jungfrau** almost equal them in height, and reach an elevation of about 14,000 ft. The *glaciers*, for which the Alps are so celebrated, lie chiefly on the Swiss side. They vary in length from 3 to 20 miles, sometimes exceed a mile in width, and vary in thickness from 100 to 600 ft. These ice-streams are to be distinguished from *avalanches* or snow slips. They creep down the Alpine valleys very slowly, but grind and smooth the rocks over which they move by their enormous weight. They often advance several thousand feet below the snow-line until their advance is checked by the high temperature, and they terminate in streams of water which give birth to large rivers.

The **Jura** Mountains consist of several parallel ranges with long valleys between. They have an average elevation of between 3000 and 4000 ft., and are clothed to their very summits with forests of pine. On the higher portions of the chain, however, snow lies for half the year.

The mineral products are various, and include silver, copper, iron, and lead. They are not, however, generally worked, except in the canton of Grisons in the east. Marble, porphyry, alabaster, sulphur, and rock-salt are occasionally met with. Mineral springs are numerous, especially in the canton of Berne. Among the best known, however, are those of *Pfeffers* in St. Gall, and those of *Baden* in Aargau.

RIVERS AND LAKES.—The chief rivers of Switzerland are the upper courses of the Rhone and Rhine, together with several streams belonging to them. The Rhone and Rhine both rise in the neighbourhood of St. Gothard, and in this centre also rises the *Ticino*, which flows southward through a canton which bears its name, and enters Lake Maggiore. The south-east of Switzerland contains the source of the *Inn*, which rises in a small lake among the Rhætian Mountains, and flows north-east through a deep and narrow valley called the Enghadin. On the west side of Switzerland the boundary is formed for some distance by the river *Doubs*, a feeder of the Saone, which joins the Rhone at Lyons.

The **Rhone** has its source in a glacier on the western side of St. Gothard, at an elevation of 7500 ft. It flows at first to the south-west, but near Martigny makes a sharp bend to the north-west and enters *Lake Geneva*. This lake is crescent-shaped, and is about 45 miles long from east to west, and from 2 to 8 miles wide. Near the eastern extremity, and all along the southern shore, the scenery exhibits great boldness and grandeur; on the north side it is adorned with a succession of hills covered with fields and vineyards, interspersed with numerous towns and villages. The Rhone, when it enters the lake, is turbid and discoloured; but at the town of Geneva, where it issues from it, the water is beautifully clear and transparent. The river is now joined by the Arve, which rises at the north-eastern extremity of the valley of Chamouni, and drains the French department of Haute Savoie. The Rhone next passes through a rocky defile between the Alps and Jura Mountains, and enters France.

The course of the **Rhine** has been divided into three parts: upper, middle, and lower. It is the Upper Rhine, from its source to Basle, that belongs to Switzerland. The river originates in two streams, the Vorder and Hinter Rheins. The *Vorder Rhein* has its source in a small lake which lies in the neighbourhood of St. Gothard, at an elevation of 7700 ft. Its course is at first north-east through the valley of the Rheinvald, which is enclosed on both sides by steep rocks rising 3000 ft. above the river, and clothed to their very summits with stately firs. The *Hinter Rhein* flows from a glacier at an elevation of 7300, and it joins the Vorder Rhein a few miles above Coire. The united stream now flows northward through a fertile and romantic valley, and for some distance forms the eastern boundary. It next enters *Lake Constance*, which is about the same size as Lake Geneva, but its shores are flat, and the scenery tame. The lake lies almost wholly within German territory, and the town of Constance belongs to Baden. Soon after leaving the lake, the Rhine bursts through a spur from the Black Forest Mountains, and forms the celebrated *Falls of Schaffhausen*, 75 ft. in height, and perhaps the finest falls in Europe. From this point to Basle the Rhine forms the northern boundary of Switzerland. The river winds in a narrow channel between lofty cliffs, and is interrupted by crags which often rise above the stream.

About midway between Schaffhausen and Basle the Rhine is joined on the left bank by the **Aar**, which drains the greater part of Switzerland. The river has its source in two glaciers which lie on the northern slopes of Finsteraarhorn, the highest summit in the Bernese Alps. The Aar flows at first to the east until it reaches the Grimsel Pass, and its course is then south-west as far as the Lake of Brienz. A few miles below the Grimsel Pass the Aar forms the *Falls of the Handeck*, which are 250 ft. in height. The highest falls in Europe, however, are those of the *Staubbach* (900 ft.), which occur in a small stream that enters the Lake of Brienz near its western extremity. The Aar, flowing from the *Lake of Brienz*, passes Interlaken, and enters the *Lake of Thun*. Then continuing in a north-westerly direction it is joined below Berne by the Saane. The Aar next flows for a short distance almost due north, and receives the Thiel, which drains the lakes of *Neufchatel* and *Bienne*. Flowing now for some distance to the north-east, it receives on the right bank the Reuss and Limmat, and then flowing again due north joins the Rhine. The Reuss rises in the Furka Pass, and flows through the celebrated *Pass of St. Gothard*, and enters the *Lake of Lucerne*. This is one of the prettiest of the Swiss lakes, and its shores are adorned by the summits of Pilatus and Rigi, which rise to the height of 9000 ft. and 6000 ft. respectively. Issuing from the lake the Reuss flows northward, and is joined by another stream which drains the *Lake of Zug*. The Limmat has its source in the canton of St. Gall, and drains the lakes of *Wallenstadt* and *Zurich*. It joins the Aar below Baden, a celebrated watering-place.

CLIMATE AND PRODUCTIONS.—Owing to the general elevation of the surface, and in some degree no doubt to the melting of the snow and glaciers, the climate of Switzerland is colder than might at first be expected. Its annual average temperature is below that of England, but this is owing chiefly to its long severe winters, for in summer the heat is often very great in the valleys, and the vine is cultivated up to an elevation of 1700 feet. The country, upon the whole, is well wooded. In many places the forests which cover the sides of the mountains are preserved as a protection against avalanches.

Among the wild animals are the wolf, bear, ibex, chamois, and marmot, but all these are becoming scarce. Eagles and vultures are common among the mountains. One species of vulture, known as the *lamb-destroyer*, is said to be the largest native bird of Europe. It will attack sheep, lambs, and young deer; and it is said that the chamois and ibex are sometimes its victims. The celebrated St. Bernard dogs are a breed of spaniels remarkable for their strength and sagacity. They frequently attain the height of 2 feet with a length of 6 feet.

PEOPLE.—The population of Switzerland in 1870 was 2,669,000, which is on the average about 170 persons to a square mile. The inhabitants belong to three nationalities speaking distinct languages. In the central, northern, and eastern portions of the country the people are of *German* origin; in the west and south, *French*, except in the canton of Ticino or Tessin where the race is *Italian*. German is the official language of the government, but French is generally understood by the educated classes throughout the country.

In the Enghadin and the adjacent mountain tract the inhabitants speak a dialect which bears a closer resemblance to Latin than either Italian or French does.

The government is a federal republic. The whole country is divided into 22 cantons, varying greatly in size, but each is independent. They are united together, however, on equal terms for mutual defence, and the general affairs of the whole are entrusted to a Diet, which consists of a National Council and a Senate, both elective. The Diet assembles at Berne, which is therefore looked upon as the capital of the Confederation.

About three-fifths of the population are Protestants: these include chiefly the manufacturing cantons of the north and west. The inhabitants of the south and east are chiefly Roman Catholics. Education is in an advanced state, especially in the Protestant cantons. The Swiss are distinguished by their frankness, industry, bravery, love of freedom, and love of country. Many of the peasantry every year leave their homes in search of employment in other countries, but they almost invariably return to spend their earnings in their native valleys. There are few large estates in Switzerland, the property being for the most part in the hands of small proprietors who build and repair their own wooden houses, and till their own land. Among the peasantry none of the women are exempt from field work, even in the families of very substantial proprietors; the hard work, however, is generally done by the men.

INDUSTRY.—Switzerland is chiefly a *pastoral* country, and is noted for its cheese and other dairy produce. In summer the cattle are driven to the mountains to pasture, and the herdsmen live during the season in rude wooden huts called *chalets*, returning in winter to the lower grounds. Agriculture is carried on in the valleys where wheat, oats, maize, barley, flax, hemp, and tobacco are produced. Wine also is made in some districts.

The **manufactures** are carried on chiefly in the cantons of the north and west: the chief manufactures being silks, cottons, and linens. Coarse linen and woollen cloths are also extensively made by the peasantry for their own use. The western cantons, especially those of Geneva and Neufchatel, are famous for the making of watches, musical boxes, and jewellery. Among other articles manufactured are leather, paper, gloves, lace, cutlery, and mathematical instruments. The chief articles of export are woods of all kinds, charcoal, cheese, preserved milk, silks, watches and jewellery. The imports are chiefly corn, wine, colonial produce, fruits, raw cotton, salt fish, and coal. Basle and Geneva are the principal seats of foreign trade: Berne, Zurich, and Lucerne, of internal trade and commerce.

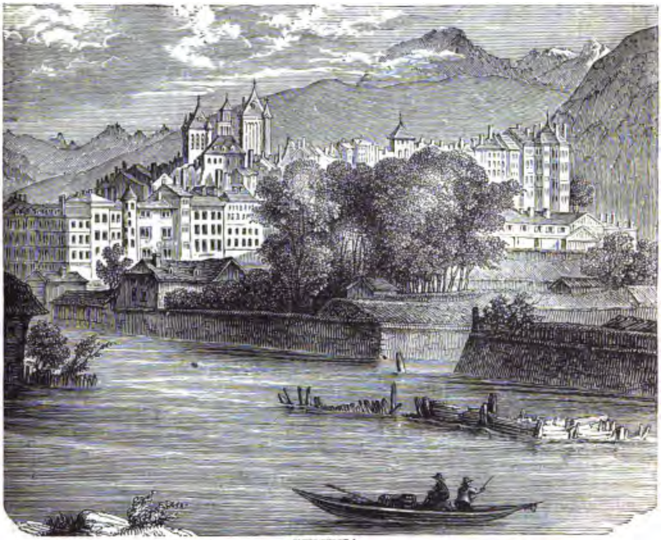
INTERNAL COMMUNICATION.—Several splendid roads cross the Alpine chain. Steamboats navigate the chief lakes, and all the principal towns in the north and west cantons are connected by railways. A railway tunnel through Mount St. Gothard is now in process of construction, and, when completed, the Swiss and Italian lines will be connected.

The chief passes from Switzerland across the Higher Alps are those of *Great St. Bernard* and the *Simplon*, which lead into Italy; the *Pass of St. Gothard*, which connects the valleys of the Reuss and Ticino; the *Pass of Bernadin*, near the source of the Hinter Rhein; and the *Splugen*, a little further east. All these, with the exception of that of Great St. Bernard, are practicable for wheeled carriages.

DIVISIONS AND TOWNS.—In the following Table we give a list of the twenty-two cantons, with the chief towns in each, commencing with Geneva in the west:—

CANTONS.	TOWNS.
Geneva,	Geneva.
Vaud,	Lausanne, Vevey.
Fribourg,	Fribourg.
Neufchatel,	Neufchatel, Chaux de Fonds, Locle.
Berne,	Berne, Thun, Brienz, Interlaken.
Soleure,	Soleure.
Basle,	Basle.
Aargau,	Aarau, Baden.
Zurich,	Zurich.
Schaffhausen,	Schaffhausen.
Thurgau,	Frauenfeld.
St. Gall,	St. Gall, Wallenstadt.
Appenzell,	Appenzell.
Glarus,	Glarus,
Schwytz,	Schwytz.
Zug,	Zug.
Lucerne,	Lucerne.
Unterwalden,	Stanz, Sarnen.
Uri,	Altorf, Andermatt.
Grisons,	Chur.
Ticino,	Bellinzona, Locarno, Lugano.
Valais,	Sion, Martigny.

Geneva, situated on the Rhone where it issues from the lake, is the largest town in Switzerland. It is noted for its manufactures of watches and jewellery, and has a population of 67,000. Geneva has produced several eminent individuals, amongst whom are Rousseau, the musician; Casaubon, the naturalist; Sismondi, the historian; Neckar, the statesman; and his daughter, Madam de Staël. **Lausanne**, on the northern shore of the lake, has a beautiful situation. Here Gibbon wrote the larger portion of his great work the "Decline and Fall of the Roman Empire." The population is 26,000. **Fribourg**, on the Saane, is remarkable for its singular situation. It is divided into the upper and lower town—the former built on the summits of a succession of rocky hills; the latter, in the deep valley below—and there is communication between the two by means of stone staircases. A fine suspension bridge, about 900 ft. in length and 174 ft. in height, crosses the ravine through which the river flows. In the upper part of the valley of the Saane stands *Gruyeres*, celebrated for its cheese. **Neufchatel**, on the western side of the lake, has some trade in agricultural produce. *Chaux Fonds* and *Locle*, both in the Jura region, and near the French border, are distinguished for watchmaking. **Berne**, on the Aar, the capital of the Confederation, stands at an elevation of 1700 feet, and is the best built city in Switzerland. It possesses a university and several scientific institutions. The population is about 36,000. **Interlaken**, which stands between the lakes of Thun and Brienz, is a favourite resort for summer tourists, as it is a convenient centre from which to make excursions into various parts of the Oberland (*Upperland*) of the Bernese Alps.



GENEVA.

Basle, or **Basel**, on the Rhine, is the great manufacturing and commercial centre of Switzerland. It is especially distinguished for its ribbons; and it also produces gloves, paper, leather, and printed cottons. It possesses a cathedral and university, and has a population of 45,000. In the vicinity of the town a marble monument has been erected to commemorate the battle of St. Jacobs (1444), when 1600 Swiss kept a French army of twenty times their number in check for ten hours. Holbein, the painter, was a native of Basle. **Aarau**, on the railway from Basle to Lucerne, is a thriving place with manufactures of silk and cotton; it has a cannon foundry and bleachfields. **Baden**, on the Limmat, is celebrated for its hot springs, which were known to the Romans.

Zurich, beautifully situated at the northern extremity of its lake, is distinguished for its manufactures of cotton and silk. The Reformation in Switzerland was begun here by Zuinglius (1519). The population is nearly 60,000. **Schaffhausen**, about three miles from the celebrated falls, is a quaint, old-fashioned town, but has considerable trade, as it is a depôt between Germany and Switzerland. The canton of Schaffhausen lies on the north bank of the Rhine, and is almost surrounded by the territory of the Grand Duchy of Baden. It was admitted into the Swiss Confederation in 1501. **St. Gall** is the centre of a large manufacturing district which produces cottons and muslins. The population is about 16,000.

Lucerne is pleasantly situated at the outlet of the Reuss from the lake of Lucerne, and has a population of about 15,000. It stands in the centre of a district interesting not only for its scenery but for its historical associations. Lucerne, Unterwalden, Uri, and Schwytz, are termed the "Forest Cantons," and these, in the fourteenth century, began the struggle for national independence. The first victory gained over the Austrians was that of *Mogarten*, on the borders of the cantons of Schwytz and Zug (1315). *Sempach*, to the north-west of the town of Lucerne, was the scene of another great victory in 1386; and at *Naefels*, in Glarus, there was a third triumph in 1388. **Altorf**, near the south-eastern extremity of the Lake of Lucerne, is intimately associated with the history of William Tell, who is said to have been born in the village of *Burglen*.

Chur, or **Coire**, the chief town in the canton of the Grisons, has an important transit trade between Austria and Italy. **Lugano**, finely situated on the western shore of the lake of the same name, is a well-built and handsome town, and has considerable trade, being on the route which crosses the St. Gothard Pass. The population is about 6000. The Lake of Lugano lies chiefly in the canton of Tessin, and is connected with the Lake of Maggiore by a small stream called the Tresa. The people of Lugano are Italians in language, manners, and appearance. **Martigny** stands upon the Dranse, near its confluence with the Rhone. Here commences that road that leads across the Great St. Bernard, as well as a mule path to Chamouni and Mont Blanc.

GERMAN EMPIRE.

BOUNDARIES AND EXTENT.—The German Empire embraces a large tract of Central Europe, extending from the Baltic Sea to Switzerland, and from the meridian of 6° to that of 23° east longitude. The total area thus included is nearly 209,000 square miles.

The extreme northern limit of Germany is the boundary line between Schleswig and Jutland (lat. 55° 27′). The southern boundary is formed by Switzerland and Tyrol, if we except the small state of Lichtenstein, which lies on the east bank of the Rhine, above Lake Constance, and between Switzerland and the Tyrol. It will be seen that in the above estimate we have not included the German provinces of Austria.

COAST-LINE.—The only coast-line belonging to Germany is that washed by the Baltic and the German Ocean. The shores are generally low and flat, in some cases protected by dunes or sand hills, and in other parts by artificial dykes. The Baltic portion is distinguished by shallow estuaries called *haffs*, which are sometimes protected seaward by a long tongue of low land.

Commencing at Memel, in the extreme east of Prussia, we meet with the **Kurische Haff**, into which flows the river Niemen. To the south is **Frische Haff**, which communicates with the Gulf of Dantzic. Leaving the gulf, we find the coast running to the south-west, and there is no opening of importance until we reach **Stettiner Haff**, which is protected by the islands of *Wollin* and *Usedom*. To the north-west is the irregular shaped island called *Rügen*. Passing this island, and again turning south-west, we reach Lubec Bay. The coast of Schleswig is very broken, though still low, and is skirted by narrow islands which have been severed from the mainland. The harbours of Kiel, Schleswig, and Flensburg, on the west, and that of Rendsburg, on the east, are the chief openings. Between the mouth of the Elbe and **Dollart Zee**, into which flows the Ems, the coast is very low, and in some places is protected by dykes. The coast of Oldenburg is indented by a large opening called the **Gulf of Jahde**. A chain of low islands commences here and extends in a curve to the Helder in Holland.

SURFACE.—The northern portion of Germany forms part of the Great European Plain, and is for the most part flat. The soil is not very fertile, and extensive forests alternate with heaths, morasses, and small shallow lakes. Central Germany may be described as hilly; the soil is fertile, and

BRITISH ISLES
SCOTLAND
Edinburgh
NORTH SEA
IRELAND
Dublin
Irish Sea
Liverpool
Manchester
ENGLAND
Birmingham
Wales
London
Bristol Channel
English Channel
Channel Is.
Normandy
Paris
Brittany
Orleans
FRANCE
BAY OF BISCAY
Bordeaux
Lyons
Toulouse
Marseilles
ATLANTIC OCEAN
Oporto
PORTUGAL
Lisbon
SPAIN
Madrid
Barcelona
Valencia
Balearic Islands
Cadiz
Strait of Gibraltar
Gibraltar
Corsica
Sardinia
MEDIT
ALGERIA
Algiers
MOROCCO
AFRICA

William Collins Sons & Cº Lo

CENTRAL EUROPE
British Miles
100 50 0 100 200
SWEDEN
Copenhagen
BALTIC SEA
Memel
Tilsit
Königsberg
Dantzic
Elbing
Bromberg
Stettin
Posen
Warsaw
Berlin
Brandenburg
Wittenberg
Halle
Leipzig
Dresden
Breslau
Oppeln
Brieg
Cracow
Jaroslav
Brody
Lemberg
Galicia
Poland
RUSSIA
R. Bug
Prague
Bohemia
Moravia
Olmutz
Brünn
Carpathian Mountains
Czernowitz
Bessarabia
Jassy
Tokay
Miskolcz
Debreczin
Vienna
Presburg
Linz
Munich
Ulm
Augsburg
Ratisbon
Nuremberg
Bamberg
Frankfort
Weimar
Coburg
Erfurt
Hanover
Hamburg
Lubeck
Mecklenburg
Schwerin
Stralsund
Rügen
Köslin
Bornholm
Austria
AUSTRIA
Salzburg
Innsbruck
Noric Alps
Bruck
Buda
Pesth
Hungary
Balaton See
Klausenburg
Transylvania
Moldavia
Hermanstadt
Kronstadt
Galatz
Kilia
Szegedin
R. Maros
Temeswar
Peterwardein
R. Drave
Agram
Croatia
Esseck
Slavonia
R. Save
Laybach
Trieste
Trent
Botzen
Klagenfurt
Venetia
Venice
Verona
Istria
Fiume
Belgrade
SERVIA
Widin
Wallachia
Krajova
Bukharest
Rustchuk
Silistria
Kustendji
Varna
Shumla
Danube
Sistova
Tirnova
BULGARIA
Balkan Mts
Sophia
Roumelia
Philippopoli
Adrianople
Burghas
Constantinople
Sea of Marmora
Bosnia
Zvornik
Bosna Serai
Mostar
Herzegovina
Dalmatia
Spalato
Zara
Ragusa
Cattaro
Scutari
Montenegro
Nissa
Prizrend
Skopia
Bitoglia
Salaniki
Albania
TURKEY
Durazzo
Parma
Modena
Bologna
S. Marino
Ancona
Florence
Tuscany
Pisa
Leghorn
Sienna
Perugia
Elba
Grosseto
Rome
Civita Vecchia
Velletri
Chieti
R. Tiber
Capua
Gaeta
Naples
Salerno
ITALY
ADRIATIC SEA
Gargano Promy
Brindisi
Taranto
Gulf of Taranto
Str. of Otranto
Corfu
Arta
Larissa
Mt Olympus
Gulf of Saloniki
Mt Athos
Lemnos
Thaso
Gallipoli
Dardanelles
Mitylene
ASIA MINOR
ARCHIPELAGO
Negropont
Athens
Livadia
Missolonghi
Corinth
GREECE
Morea
Napoli
Cyclades
Milo
Cerigo
Cerigotto Is
C. Matapan
Zante
Cephalonia
Sta Maura
Ionian Sea
Ionian Islands
Candia or Crete
Mt Ida
Cagliari
Spartivento
Ustica
Lipari Is
Palermo
Messina
Reggio
Str. of Messina
Trapani
Marsala
Sicily
Mt Etna
Girgenti
Syracuse
C. Passaro
Bizert
C. Bon
Pantellaria
Tunis
TUNIS
Gulf of Hammamet
Goza
Malta
Valetta
MEDITERRANEAN SEA
BLACK SEA
Caprera
Cosenza
Policastro
C. Leuca
15
20
25
30
50
40
35
10
15
20
25

...ow & Glasgow.

the scenery is often picturesque. The greater part of southern Germany is occupied by the *plateau of Bavaria*, which rises about 1600 feet above the sea-level, and increases in elevation towards the west, where it forms the Schwarz Wald or Black Forest Range.

The hill ranges of Central Germany seem to radiate from the mountain knot called the **Fichtelgebirge.** To the north-east are the **Erzgebirge,** which form the boundary between Bohemia and Saxony; to the south-east, the **Bohmer Wald,** between Bohemia and Bavaria. On the south-west there is a low range of hills called the **Swabian Alps,** which forms the watershed between the Rhine and Danube, and ultimately merges in the Schwarz Wald. Lastly, to the north-west, is the **Thuringian Wald,** a low range of hills which appears between the Weser and Ems under the name of **Teutoburger Wald.**

The **Schwarz Wald** runs parallel with the Rhine, and in some places exceeds 2000 feet in height. From the southern extremity of the range, a line of heights may be traced eastward, between the Rhine and Danube, as far as Lake Constance. A spur from this range crosses the Rhine and forms the Falls of Schaffhausen; but the main ridge of hills passes round the lake and is connected with the Tyrolese Alps. On the western side of the Rhine, and parallel with the Schwarz Wald, are the **Vosges Mountains,** which for some distance form the boundary between Germany and France, but the northern half of the range is now entirely in Germany. The **Harz** Mountains, between the Elbe and the Weser, attain an elevation of 3600 feet, and are famous for the optical delusion known as the "Spectre of the Brocken."

Minerals.—Some of the mountain chains of Germany—especially the Harz Mountains and the Erzgebirge (*metal mountains*)—are very rich in mineral produce, especially *lead*, *silver*, and *copper*. *Iron* and *coal* are widely diffused in Prussia and Saxony. Various *precious stones*, such as the amethyst, topaz, and rock-crystal, are met with in Saxony and Bohemia; and large quantities of *amber* are dug out of the narrow tongue of land that separates the Kurische Haff from the Baltic. Mineral springs are abundant in Germany.

Rivers.—The chief rivers are the Rhine, Elbe, Oder, Vistula, and Upper Danube; others of less note are the Ems, Weser, Pregel, and Niemen.

The **Rhine** enters Germany at Basle, and from this point until it enters Holland it flows through German territory. From Basle to Mainz the river flows through a broad valley, and is of considerable width. At

Mannheim, it is joined by the Neckar, which rises in the Schwarz Wald, and passes Stuttgart and Heidelberg on its way. At Mainz it receives the Main, which rises in the Fichtelgebirge, and, flowing in a winding course to the west, joins the main stream after a course of 360 miles. The Rhine now flows west to Bingen, and then the remainder of its course is to the north-west. Between Bingen and Bonn is the part most celebrated for its scenery. The river winds through a narrow valley, and in some places resembles a succession of lakes. On the east rise bare cliffs or steep slopes planted with vineyards; on the west, thick woods interspersed with picturesque villages; and on both sides are the ruins of old castles, each associated with some romantic story or poetic legend. At Coblentz the Rhine is joined by the Moselle, which rises in the Vosges Mountains and passes the towns of Nancy, Metz, and Treves, near which town it is joined by the Saar, so often mentioned in the Franco-German war (1870). The lower part of the Rhine, below Cologne, is destitute of beauty, but is of great commercial importance, and when it enters Holland the river has a breadth of 2000 feet. The total length of the Rhine from its source to its outlet is about 900 miles, and it drains an area of more than 80,000 square miles.

The **Elbe** rises in several streams on the south side of Schnee Koppe, at an elevation of 4400 feet. Descending to the level country, it passes the battle-fields of Sadowa and Koniggratz, so fatal to Austria in 1866, and bending round to the north-west is joined by the Moldau, on which stands Prague. Bursting through the mountains it now flows through a picturesque country called "Saxon Switzerland," through scarcely any elevation exceeds 3000 feet in height. Its general course is next to the north-west, and it passes on its way Dresden, Magdeburg, and Hamburg. It now begins to form an estuary which, at Cuxhaven, is twelve miles wide. The chief tributaries in this part of its course are the Mulde, Saale, and Havel. The Mulde rises in the Erzgebirge; the Saale, in the Fichtelgebirge; and the Havel brings with it the waters of the Spree, on which Berlin stands. The total length of the Elbe is 720 miles.

The **Oder** rises in Moravia at an elevation of 1800 feet. It flows at first to the north-east, until it leaves the Austrian territory, and then its course is to the north-west, passing Breslau and Frankfort. Its chief feeder is the Warta, which brings with it the waters of the Netze. The Oder pours its waters into Stettiner Haff after a course of about 500 miles.

The **Vistula** rises in the Carpathian Mountains, on the borders of Moravia and Galicia. It proceeds at first north and then eastward passing the town of Craçow. It next flows to the north-east, forming for some distance the boundary line between Austria and Russia. After passing Warsaw it receives the Bug, a stream nearly equal in size to itself. It now turns to the north-west, and then again turning northwards empties itself into the Baltic after a course of about 600 miles. Before reaching the sea the Vistula divides into two channels, one of which flows into Frische Haff. The western arm afterwards divides again; the main channel, however, passes Dantzic. As the Vistula flows for the most part through a level country, it is navigable throughout the greater part of its course, and large quantities of wheat, timber, and other produce, are conveyed to Dantzic from the interior.

The course of the **Danube**, like that of the Rhine, may be divided into three parts: the Upper, Middle, and Lower. The Upper Danube, from its source to Passau, lies wholly within Germany. The river is formed by two streams which rise on the eastern declivity of the Black Forest, above 24 miles from the banks of the Rhine, at an elevation of 2850 ft. A third stream which originates in a spring in the palace garden of Donaueschingen joins the infant river, which thenceforth takes the name of Danau, or

Danube. The river now flows north-east as far as Ratisbon, passing Ulm and Blenheim, and is joined by the Iller and Lech on the right bank, and by the Regen on the left. Then turning to the south-east, the Danube receives the Isar, on which stands Munich, and the Inn which joins it at Passau.

The **Weser** is formed by two streams, the Werra and Fulda. The former rises in the Thuringian Wald, and flowing to the north-west, is joined at Minden by the Fulda, on which Cassel stands. The Weser now flows with a winding course to the north, and passing Minden where the English won a victory in 1759, is joined on the right bank by the Aller. Upon the Leine, a feeder of the Aller, stand Göttingen and Hanover. Below the junction of the Aller the main stream passes Bremen, and then expands into an estuary, near the entrance to which stands Bremerhafen. The total length of the Weser is about 600 miles.

CLIMATE AND PRODUCTIONS.—The climate is upon the whole temperate and healthy. It resembles that of the north of France, but in Germany the winters are more severe, owing to its more inland situation. The Rhine is sometimes frozen as far south as Mannheim, though in ordinary seasons the ice only lasts a day or two. On the shores of the Baltic the climate is cold and humid, and is sometimes characterised by violent winds. In the south of Prussia the winters are cold, owing to the greater elevation of the surface. In Central and Southern Germany the air is drier and more calm, and in summer warm and pleasant.

Though there is much waste land in Northern Germany there are many fertile tracts, well adapted to the growth of wheat, bordering on the rivers. On the other hand, there are large tracts of swampy land on the plateau of Bavaria. In Central Germany, however, the soil is of excellent quality and well adapted to the growth of the vine. Forests are very extensive on all the mountain and hill ranges, as the frequent occurrence of the term *wald* (forest) would indicate. In the recesses of these forests the wild boar and wolf, as well as the fox, and deer of various kinds, still find shelter.

PEOPLE.—The population, exclusive of the German provinces of Austria, exceeds 40,000,000, and with the exception of the inhabitants of the eastern provinces of Prussia, all belong to the Teutonic race, and speak the German language. About two-thirds of the entire population are Protestants, the Roman Catholics being most numerous in Southern Germany. Education, especially in Prussia, is in a very advanced state, and the universities are numerous, and many of them of European celebrity. The empire consists of a number of independent states, varying considerably in size and population, all united in one Confederation under the King of Prussia, who is Emperor of Germany.

The legislature consists of the *Bundesrath* and *Reichstag;* the former consists of the delegates of the confederate governments, representing in all 58 votes. The Reichstag has 382 members elected by the people. The consent of the Bundesrath is necessary for a declaration of war. The emperor is commander-in-chief both of the army and navy, but in time of peace the armies of Bavaria and Wurtemberg form separate corps under the command of their respective kings. The army, in time of peace, consists of about 400,000 men, but in time of war exceeds 1,200,000. The imperial navy comprises about 80 vessels, including 18 ironclads. There are no colonies belonging to the Empire.

INDUSTRY.—**Agriculture** forms the chief employment of the people, and the chief articles of cultivation are rye, wheat, and other grains; the vine, tobacco, flax, chicory, beetroot, madder, and woad.

Rye is the chief food plant; **chicory** is used instead of coffee among the lower classes, and **beetroot** is made into sugar. The **vine** is cultivated chiefly in Central and Southern Germany. The famous Johannisberg is produced in Nassau, near the right bank of the Rhine. **Madder** and **woad** are used as dyes. Sheep are numerous throughout Germany, especially in Silesia and Saxony; pigs are reared in large numbers in the Rhine provinces of Prussia, and Westphalia is famous for its hams.

The **manufactures** consist chiefly of linen, woollen, cotton, and silk goods; hardware, leather, glass, musical and scientific instruments, paper, porcelain, clocks, watches, and toys.

The Rhine province of Prussia is distinguished for silk, cotton, and hardware manufactures; Saxony for its linens, woollens, and porcelain; Berlin for its glass, jewellery, and works in metal; Bavaria for its beer.

The greater part of the foreign trade is carried on by Dutch and English vessels. The chief exports are corn, live stock, wool, timber, iron, lithographic stones, porcelain, glass, and toys. The imports are cotton and silk manufactures, wines and brandy, hemp, tallow, leather, and colonial produce. The chief ports are Hamburg, Bremen, Lubec, and Dantzic.

Much of the inland trade is carried on by means of fairs, of which those of Leipsic and Frankfort are the most important. During the last fifty years internal trade has grown considerably owing to the establishment, through the influence of Prussia, of the *Zollverein*, or Customs Union, the object of which is to secure freedom of transit for goods through the different states. Before the establishment of this union, it is said that a vessel passing up the Rhine paid toll to twenty different states. Now all the duties of import and export are paid on the general frontier, and the duties thus received are paid into a common treasury, and afterwards divided among the different states according to their population. The Zollverein now comprises all the states of Germany except Hamburg and Bremen, which are free ports.

The internal communication of Germany by means of rivers is excellent, and, perhaps as a consequence, canals are few. Among these, however, may be mentioned the *Finou Canal*, between the Elbe and the Oder; and the *Ludwig Canal*, in Bavaria, which connects the Rhine with the Danube. The roads in Germany are in moderate condition, but railways are numerous, in Northern Germany especially, and the system is rapidly spreading. The number of miles of railway in 1872 amounted to 12,700.

DIVISIONS.—The German Empire consists of twenty-five states, exclusive of Alsace-Lorraine, which at present is in an exceptional position. It does not form an independent state, nor is it included in any of the others. It belongs to the whole empire in general, and is under the special administration of the chancellor or first minister of the empire. In the following Table the area and population of each state is given:—

NORTH GERMANY.

	Names of States.	English Sq. Miles.	Pop. 1871.
1.	Prussia with Lauenburg,......	134,499	24,693,066
2.	Saxony,......................	5,788	2,556,244
3.	Mecklenburg Schwerin,........	5,138	557,897
4.	Saxe Weimar,................	1,404	286,183
5.	Mecklenburg Strelitz,........	1,131	96,982
6.	Oldenburg,...................	2,470	314,788
7.	Brunswick,...................	1,425	311,715
8.	Saxe Meiningen,..............	952	187,844
9.	Saxe Altenburg,..............	510	142,122
10.	Coburg and Gotha,...........	760	174,339
11.	Anhalt,......................	907	203,354
12.	Schwarzburg Rudolstadt,.....	364	75,523
13.	Schwarz Sondershausen,......	332	67,191
14.	Waldeck,....................	438	56,218
15.	Reuss Schleiz,...............	122	45,094
16.	Reuss Greiz,.................	320	89,032
17.	Schaumburg Lippe,..........	171	32,051
18.	Lippe Detmold,..............	438	111,153
19.	Lubeck,......................	109	52,158
20.	Bremen,......................	97	122,565
21.	Hamburg,....................	157	338,974
		157,532	30,514,493

SOUTH GERMANY.

22.	Bavaria,.....................	29,292	4,861,402
23.	Wurtemburg,................	7,531	1,818,482
24.	Baden,......................	5,821	1,461,428
25.	Hesse-Darmstadt,............	2,965	852,843
		203,141	39,508,650
26.	Alsace-Lorraine,..............	5,603	1,549,459
	Total of all Germany,......	208,744	41,058,109

PRUSSIA.

The kingdom of Prussia stretches across the whole breadth of the German Empire, and is bounded on the north by the Baltic, Denmark, and the North Sea; and on the south by Austria, Saxony, and some of the minor German states. Its length from east to west is 740 miles, and its extreme breadth about half that distance. It does not, however, include all the area thus defined, as Mecklenburg, Oldenburg, Brunswick, and some smaller states, are surrounded by Prussian territory.

Previous to 1866, Prussia was even less compact than it now is, but at the conclusion of the war with Austria in that year, Hanover, Nassau, Hesse-Cassel, Schleswig-Holstein, and the city of Frankfort were annexed.

The coast-line has been noticed in the general description of Germany. The surface is for the most part level, but in the south-east it has a considerable elevation. The *Riesengebirge*, which form the boundary between Prussia and Bohemia, reach their culminating point in *Schnee Koppe* (snow cap), which attains an elevation of 5300 ft. The western part of Prussia is more diversified than the eastern portion. Here we meet with the Harz Mountains, the TeutoburgerWald, and the Thuringian Wald. On the western side of the Rhine, and north of the Moselle, the country is very hilly and picturesque, the chief range being the *Eifelgebirge*, which is of volcanic formation; and the soil, formed by the debris of the volcanic rocks, is particularly suited to the growth of the vine. On the opposite bank of the Rhine is a low range of hills known as the *Wester Wald*, a spur from which forms the celebrated *Drachenfels*, so conspicuous an object in sailing from Bonn to Coblentz.

The climate of Prussia is similar to that of England. Along the shores of the Baltic it is cold and humid, and in Silesia the temperature is rather low, owing to the elevation of the country; but in the Rhine provinces the summers are hot, and the grape ripens to perfection. The soil, especially in the eastern half of Prussia, is not very fertile; and there are extensive forests of fir. The mineral products are very valuable, and include coal, iron, copper, lead, silver, zinc, alum, nitre, sulphur, amber, and various precious stones such as the agate, jasper, and onyx. Salt obtained from brine springs is abundant in Prussian Saxony, and there are upwards of 100 other mineral springs in Prussia all more or less celebrated.

DRACHENFELS.

Agriculture gives employment to about three-fourths of the population. The chief articles cultivated are wheat, rye, oats, barley, peas, millet, rape seed, maize, linseed, flax, hemp, tobacco, and hops. The rearing of cattle is also carried on to a great extent. *Sheep* with superior wool are bred in Silesia, *hogs* in Westphalia, and large numbers of *geese* in Pomerania. The western provinces are noted for fruits and vegetables, the Rhine province for wines, and silk is produced in Brandenburg.

The **manufactures** consist chiefly of linen, cotton, woollen, and silk goods. Silesia, Prussian Saxony, and Westphalia, have long been noted for *linens; woollen* and *silk* goods are produced in Brandenburg, while *cotton*, woollen, and silk, as well as *iron* manufactures, are carried on in Rhenish Prussia. Next in importance are leather, earthenware, glass, paper, and tobacco manufactures. The chief exports are agricultural produce, manufactured goods, wines, mineral waters, wool, timber, pitch, linseed, and tobacco. The chief imports comprise colonial produce, raw cotton, cotton yarn, wines, fruits, silk, and tobacco leaf. The chief ports are Dantzic and Stettin.

The people belong for the most part to the *Teutonic* race, except in the provinces of Posen and Prussia Proper where the *Sclavonic* race predominates; the language spoken throughout the country, however, is German. Education among all classes is in a highly efficient state, and there are ten celebrated universities. About two-thirds of the whole population are Protestants; the Roman Catholics, however, form the majority in the Rhine provinces. The government is a constitutional monarchy, similar to that of England, consisting of a sovereign and two legislative chambers.

PROVINCES AND TOWNS.—Prussia is divided into about twelve provinces, which are subdivided into governments and circles. In the following Table we give a list of the provinces with the chief towns in each:—

PROVINCES.	TOWNS.
Prussia Proper,	Konigsberg, Dantzic, Memel, Tilsit.
Pomerania,	Stettin, Stralsund.
Posen,	Posen, Bromberg.
Silesia,	Breslau, Görlitz, Liegnitz.
Brandenburg,	Berlin, Potsdam, Frankfort.
Saxony,	Magdeburg, Halle, Erfurt, Wittenberg, Eisleben, Torgau.
Westphalia,	Münster, Minden.
Rhenish Prussia,	Cologne, Aachen, Barmen, Elberfeld, Dusseldorf, Crefeld, Coblentz, Bonn, Treves.
Hessen-Nassau,	Frankfort, Cassel, Hanau, Homburg, Wiesbaden, Ems.
Hanover with Jahd,	Hanover, Osnabrück, Göttingen, Emden, Wilhelmshafen.
Schleswig-Holstein,	Schleswig, Altona, Kiel, Flensburg.
Lauenburg,	Lauenburg.
Hohenzollern,	Hechingen, Sigmaringen.

Konigsberg, the capital of Prussia Proper, stands on the Pregel. It is a town of considerable manufacturing and commercial importance, and contains a celebrated university. The population is about 112,000. As a bar across the mouth of the river prevents large vessels from reaching the city, its port is properly at *Pillau*. **Memel**, at the entrance of Kurische Haff, has considerable trade in timber and corn. **Tilsit**, on the Niemen, is famous for the treaty between France, Russia, and Prussia, in 1807. **Dantzic**, on an arm of the Vistula, is an ancient and badly-built town, but as a corn port ranks second only to Odessa. It also exports timber, beer, amber, salt, flax, and hemp. The population is about 90,000. Dantzic was the birthplace of Fahrenheit, the inventor of the thermometer. **Stettin**, near the mouth of the Oder, is the second port in Prussia, and has extensive sugar refineries. The chief exports are corn, wool, timber, zinc, and linens: *Swinemunde*, on the island of Usedom, is its outport. The population of Stettin is about 76,000. **Stralsund**, on the strait which separates the Isle of Rugen from the mainland, is strongly fortified, and has undergone several sieges. **Breslau**, on the Oder, is the second city in Prussia, and has manufactures of linen, cotton, woollen, and silk, as well as numerous breweries and distilleries. It is the great entrepôt of Silesia, and most of the products of the province are disposed of at its fairs. *Metals* from the mines, and *timber* from the forests, are brought here in large quantities, and it has the largest *wool* fair in Germany. It communicates by railway with Vienna, Stettin, Berlin, and Hamburg. The population amounts to

200,000. **Liegnitz**, on the Katzbach, a feeder of the Oder, lies about 40 miles to the north-west of Breslau. It is chiefly memorable for the victory gained over the Austrians by Frederick the Great, in 1760, and for the defeat of the French by Blucher in 1813.

ROYAL PALACE, BERLIN.

Berlin, the capital of **Prussia**, and the **first** city in Germany, stands upon the Spree, a few miles above its junction with the Havel. It is a well-built and handsome city, and its principal street, *Unter den Linden*, is one of the finest in Europe. The manufactures are various and extensive, and include woollen, silk, and cotton goods, porcelain, and beautiful articles of cast-iron. It possesses a famous university, and the population is nearly one million. *Spandau*, at the confluence of the Havel and Spree, is a fortress of great strength. To the south-west is **Potsdam**, which has been termed the Versailles of Prussia. It contains the palace of *Sans Souci*, and is a great station for the Prussian army. **Frankfort-on-the-Oder** is a place of considerable trade, and has three large annual fairs. It is connected by canals with the Elbe and Vistula.

Magdeburg, the capital of Prussian Saxony, stands on the Elbe, and is one of the strongest fortresses in Europe. The citadel, on an island in the river, serves also as a state prison: Baron Trenck, Lafayette, and others were confined here. The trade, which derives great facilities from the central situation of the town, is very considerable. The population is 84,000. **Halle**, a commercial town, and the seat of a university, stands on the Saale, a feeder of the Elbe. The population exceeds 50,000. **Erfurt**, on an affluent of the Saale, is connected with the history of Luther. The convent in which he spent several years of his life is now an orphan asylum, but the apartment of the reformer is preserved as nearly as possible in its original condition, and contains his bible, portrait, and other relics. **Wittenberg**, on the Elbe, formerly possessed a university in which Luther and Melancthon were professors, but the university has been removed to Halle. **Eisleben**, where Luther was born, and where also he died (1483-1546), lies about 20 miles north-west of Halle. Luther's father was a miner, and the greater portion of the inhabitants of Eisleben still work in the copper and silver mines of the vicinity. **Torgau**, on the Elbe above Wittenberg, is strongly fortified. Here Frederick the Great defeated the Austrians during the Seven Years' War (1760). **Munster**, the capital of Westphalia, stands a short distance from the banks of the Ems. It has considerable manufactures of woollen, linen, cotton, tobacco, and sugar-refining. Münster is memorable for the doings of the anabaptist fanatics in 1536. **Minden**, on the Weser, is celebrated for the victory over the French, gained by the combined forces of England and Prussia in 1759.

COLOGNE.

Cologne, on the left bank of the Rhine, is the capital of the Rhine province, and perhaps the third city in Prussia. The town is not well built, but its cathedral is one of the finest Gothic structures in Europe. It has considerable manufactures of cotton, woollen, and silk fabrics, lace, and *eau-de-Cologne*. The population is about 130,000. **Aachen**, or *Aix-la-Chapelle*, lies about 40 miles to the west of Cologne, on the borders of Belgium. It possesses some important manufactures, but is chiefly celebrated for its mineral waters. This town was the birthplace of Charlemagne, who built the cathedral which contains his tomb. The population is about 75,000. *Dusseldorf*, *Crefeld*, *Barmen*, and *Elberfeld* are all busy manufacturing towns. The manufactures consist of silk, cotton, and woollen goods, iron, and hardware. Barmen has a population of 75,000; the inhabitants of Dusseldorf and Elberfeld are nearly as numerous; Crefeld has about 58,000 inhabitants. **Coblentz**, at the junction of the

Moselle and the Rhine, is strongly fortified. It is connected by a bridge of boats with the strong fortress of *Ehrenbreitstein*. **Bonn**, between Coblentz and Cologne, derives its chief celebrity from its university, where the late Prince Consort was a student. Bonn was the birthplace of Beethoven (1770). **Treves**, on the Moselle, is perhaps the most ancient city in Germany. The whole valley of the Moselle is covered with vineyards, and Treves has considerable trade in wine.

Frankfort-on-the-Main was formerly a free city, and the capital of the German confederation, but in 1866 it was annexed to Prussia. It is one of the great centres of the inland trade of Germany, and is at the head of its money market. It was the native place of Goethe, the celebrated poet, who was born in 1749. The population is about 90,000. **Wiesbaden**, capital of the former duchy of Nassau; **Homburg**, to the north-east, on the borders of Darmstadt, and **Ems** to the north-west, are all celebrated watering-places. **Hanover**, on the Leine, a feeder of the Aller, was the birthplace of Sir W. Herschell, the celebrated astronomer (1738). It has a population of nearly 90,000. **Gottingen**, near the source of the same stream, is celebrated for its university. **Wilhelmshafen** stands on the western side of the Gulf of Jahde. **Altona**, the largest place in the province of Schleswig-Holstein, stands on the Elbe, immediately below Hamburg. The population is about 70,000. **Kiel**, on the Baltic coast, has a good harbour, and considerable trade. **Schleswig**, further north, is not a place of much importance. **Lauenburg**, about 20 miles above Hamburg, formerly belonged to Denmark, but has been recently incorporated with Prussia.

The small province of *Hohenzollern* is quite detached from the rest of Prussia, and lies within the states of Wurtemberg and Baden. It is chiefly interesting as being the original seat of the royal house of Prussia.

SAXONY.

The kingdom of Saxony is the third in importance among the states of the German Empire. It has an area of 5788 square miles, with a population of 2,560,000, the majority of whom are Protestants. The country is bounded on the south by the Erzgebirge, whose long slope is towards the north, so that the greater part of the country is mountainous or hilly. North of Meissen, however, there is a level plain. To the south-east of Dresden, where the Elbe breaks through the mountains, there is a small tract about 30 miles in length by 24 in breadth, called, on account of its picturesque scenery, the "Saxon Switzerland," though the highest summit in the district does not reach 2200 ft. The climate of Saxony is similar to that of England. More than half the surface is arable and in a high state of cultivation. There is no such thing as a common or waste. The forests cover about one-fourth of the surface, and contain valuable timber, chiefly fir, pine, beech, oak, elm, maple, and larch. Wheat and rye are not much grown except in the low valleys, *oats* and *potatoes* being the chief crops. Hops, flax, and tobacco are also grown; fruit trees are numerous, and the vine flourishes in favourable localities. Saxony is celebrated for her breeds of *sheep*, the best wool being produced in Saxon Switzerland. *Mining* is one of the principal occupations of the people. Silver is the chief metal worked, but coal, iron, lead, zinc, tin, bismuth, and cobalt are also met with. Freiberg is the centre of the silver mines. Manufacturing industry has also been largely developed, and employs about three-fourths of the people. The chief manufactures are cottons, linens, woollens, silks, and also pottery and porcelain. Meissen is the centre of the *potteries*, and Chemnitz of the *cotton* manufactures. The trade of the country is chiefly carried on by means of great fairs held at Leipsic. The chief towns are Dresden, Leipsic, Chemnitz, Freiberg, Meissen, and Bautzen.

Dresden, the capital of Saxony, is one of the best built cities in Europe. It stands upon the Elbe, in the centre of the wine district, and occupies a portion of a beautiful and well cultivated valley. Few cities possess so many attractive collections of art and antiquity, and its picture galleries are particularly fine. It carries on some important manufactures, and has a population of about 180,000. *Meissen,* about 14 miles lower down the river, is distinguished for its porcelain, and here the famous "Dresden china" is manufactured.

Leipsic stands near the right bank of the Elster, an affluent of the Saale. Next to Hamburg it is the chief trading city in Germany, and is the first book emporium in the world. It contains manufactures of cotton, leather, silk, and tobacco, but its characteristic feature is its *book trade.* It has also a famous university. The fairs of Leipsic are the most celebrated in Germany, and are held at the commencement of the New Year, at Easter, and at Michaelmas. A severe battle was fought here in 1813, when Napoleon was defeated by the Allies. The population of Leipsic is about 86,000. **Chemnitz,** on a river of that name, an affluent of the Mulde, is the principal manufacturing town in Saxony. The cotton goods, especially stockings, rival those of England in quality and cheapness. There are also manufactures of woollen, linen, and silk. The population is about 55,000. **Freiberg,** almost midway between Chemnitz and Dresden, is the centre of an important mining district. There are upwards of 500 mines in the neighbourhood. **Bautzen,** to the north-east of Dresden, stands upon the Spree. It has some important manufactures, and large iron, copper, and tile works. A battle was fought here in 1813.

BAVARIA.

The kingdom of Bavaria, the second in size and population among the German states, consists of two distinct parts. The eastern portion, comprising about eleven-twelfths of the whole, lies for the most part in the basin of the Danube; the western portion, forming the Palatinate, lies on the left bank of the Rhine. The total area exceeds 29,000 square miles, and the population amounts to 4,800,000, of whom about three-fourths are Roman Catholics.

The surface of Bavaria is an elevated plateau crossed by hill ranges, and as the country is bounded on the north and south by lofty chains, it has, upon the whole, a mountainous character. The mountains and hill ranges are well wooded, and forests cover nearly one-third of the country, and consist chiefly of pine and fir. The soil is generally good, but there are some extensive marshes along the Danube. The principal crops are wheat, rye, oats, and barley; but rice, maize, and buckwheat are also partially cultivated. The hop plant is extensively grown, and the culture of the vine is carefully attended to in the valley of the Main and in the Palatinate. Among other articles of cultivation may be mentioned tobacco, beetroot, madder, and liquorice. The minerals are important, but have not been worked to any great extent. They consist chiefly of salt, coal, iron, and copper. The porcelain clay of Bavaria is also very valuable. The chief branch of industry is *brewing*, which is carried on to a great extent. Next in importance to beer as staple products are coarse linens, woollens, cottons, leather, paper, glass, earthenware, jewellery, ironware, basketware, and woodenware. The chief towns are Munich, Nuremburg, Augsburg, Wurzburg, Ratisbon, Bamburg, Passau, Speyer, and Landau.

Munich, the capital, is situated on the left bank of the Isar, a feeder of the Danube, at an elevation of 1700 ft. above the sea. The old part of the town is quaint and irregular, but the new part contains some splendid edifices. Munich is especially distinguished for its fine galleries of painting and sculpture. The manufactures are numerous, and some of them important, such as the manufacture of optical instruments, jewellery, glass, and musical instruments. It also possesses a good university. The population of Munich is about 170,000. About 19 m. to the east is the village of *Hohenlinden*, where a battle was fought in 1800. **Augsburg**, on the Lech, was at one time one of the richest and most powerful cities of Germany. It still has some considerable manufactures, and ranks next to Frankfort as a money market. The Confession of Augsburg was here presented to the Emperor Charles V. in 1531. The population is about 50,000. To the north-west, and standing upon the Danube, is the village of *Blenheim*, famous for Marlborough's victory (1704).

Nuremburg, the second city in Bavaria, stands upon an affluent of the Main. During the Middle Ages it was the Birmingham of Europe, and it still has considerable trade. It has been long celebrated for its manufacture of wooden clocks and toys. Watches are said to have been invented here towards the close of the fifteenth century. Albert Durer, the painter, was born at Nuremburg in 1471. The population is about 83,000. **Wurzburg**, on the right bank of the Main, is strongly fortified, and has considerable trade and manufactures. The neighbourhood is famous for its wines. The population is about 40,000. **Ratisbon**, or *Regensburg*, on the south bank of the Danube, opposite to the mouth of the Regen, is a very old city, and the German Diets were held here from 1663-1806. **Passau**, at the junction of the Inn with the Danube, is a strong fortress. **Spires**, or *Speyer*, on the left bank of the Rhine, is one of the most ancient cities of Germany. The protest given in to the Diet assembled here in 1629, obtained for the German reformers the name of "Protestants."

WURTEMBERG.

The kingdom of Wurtemberg, lying between Bavaria and Baden, has an area of 7500 square miles, with a population of nearly 2,000,000, about two-thirds of whom are Protestants. Wurtemberg stands high in respect to education, and there is a university at Tubigen. The surface is for the most part mountainous, being covered with spurs from the Schwarz Wald and Swabian ranges, but there are many sheltered valleys. It is chiefly drained by the Neckar and Danube, and on the south it extends as far as Lake Constance. It possesses extensive forests, rich pastures, cultivated valleys, and hills covered with vines. Wheat, oats, barley, rye, potatoes, turnips, maize, hemp, and hops are the chief agricultural products. Silver, copper, iron, and other metals abound in the neighbourhood of the Black Forest, and mineral springs are numerous throughout the country. There are also extensive and valuable deposits of peat. The manufactures are linen, cotton, woollen, and silk fabrics, together with porcelain, leather, and tobacco. The chief towns are Stuttgart and Ulm.

Stuttgart, the capital, stands on an affluent of the Neckar, surrounded by vine-clad hills. It is a clean and handsome town in the midst of beautiful scenery. The *book trade* is very important, and Stuttgart, in this respect, is inferior only to Leipsic and Berlin. The population exceeds 90,000. **Ulm**, the second city in Wurtemberg, stands on the Danube, where it begins to be navigable. It was here that General Mack surrendered himself and his army to Napoleon in 1805.

BADEN.

The Grand Duchy of Baden extends along the left bank of the Rhine, from Lake Constance to the confluence of the Neckar. It has about the same area as Saxony, and has a population of 1,460,000, of whom about one-third are Protestants. The eastern part of the country is covered for the most part by the Schwarz Wald, but as the steep slope of this range is towards the west, there is a level tract between it and the Rhine. Only about half the country is capable of cultivation, but the forests are very extensive, and in the Schwarz Wald, pastures and even small villages are found at elevations of 3000 or 4000 ft. Corn, potatoes, tobacco, hemp, hops, and chicory are the chief articles of cultivation; and the culture of fruit, chestnuts, walnuts, almonds, and the vine gives employment to many. The chief mineral product is *salt*. The chief manufactures are those of tobacco and cigars, cotton and silk fabrics, clocks, and wooden toys. Clocks, toys, straw-hats, musical snuff-boxes, and barrel organs are made in the forest and mountainous tracts, and exported to all parts of Europe. There are two universities; those of Heidelberg and Freiburg. The chief towns are Carlsruhe, Mannheim, Heidelberg, Constance, Rastadt, and Baden.

Carlsruhe (*Charles' Rest*), the capital, stands on a fine plain about four miles from the Rhine. It is built in the form of an outspread fan round the grand ducal palace. It is quite a modern city, and has sprung up round a hunting seat built in 1715. The population is about 40,000. **Mannheim**, at the junction of the Neckar and the Rhine, is the chief commercial town in Baden. **Heidelberg**, chiefly famous for its university, stands on the Neckar amidst lovely scenery. **Constance**, on the southern shore of the lake, is famous for the council which sat here from 1414 to 1418, and which condemned Huss and Jerome of Prague to death. The house in which Huss resided, and the place where he was burnt, are still pointed out. The people of Constance are chiefly engaged in the cultivation of their vineyards, or in fisheries upon the lake. **Rastadt**, a fortified town to the south of Carlsruhe, is chiefly noted for two congresses held here: the first in 1714, the second in 1798-99. The latter terminated abruptly with the assassination of two of the French envoys. **Baden** (*baths*), one of the most frequented of German watering-places, stands in a valley of the Black Forest to the south-east of Rastadt. It is generally called *Baden-Baden* to distinguish it from the numerous other "Badens" in Germany.

ALSACE-LORRAINE.

This province embraces the whole of the ancient French province of Alsace, with the exception of the town of Belfort and a small portion of country round it, and a part of the ancient province of Lorraine. The country is diversified with hills and well watered: the chief stream in Alsace is the *Ill*, a feeder of the Rhine; and in the northern part of the province is the *Moselle*, with its tributary the Saar. The inhabitants, who number about 1,500,000, are Germans in race and language, and the whole province is rich in manufacturing and commercial industry. The chief towns are Strasbourg, Colmar, Mülhausen, and Metz.

STRASBOURG.

Strasbourg, a strongly fortified town, stands on the Ill, about a mile from the left bank of the Rhine. It is famous for its cathedral, which has a spire 466 ft. in height, and within the cathedral is the famous astronomical clock. Strasbourg has some considerable manufactures, and an extensive trade. The population is 84,000. **Colmar**, pleasantly situated in the valley of the Ill, has some manufactures of cotton stuffs and printed goods, and a population of 24,000. **Mulhausen**, about 25 miles further south, is a much larger place, and is the centre of a busy manufactaring district. The population is about 60,000. **Metz** (pron. *Mess*) is a strong fortress on the **Moselle.** It possesses considerable woollen manufactures, and produces large quantities of wine, brandy, and vinegar. It is memorable for its siege and surrender in 1870.

Among the chief towns in the remaining states of the German Empire may be noticed: Hamburg, Bremen, Lubec, Weimar, Jena, Coburg, Darmstadt, Mainz, and Worms. Hamburg, Bremen, and Lubec are *free* towns, and each exercises sovereign jurisdiction within its own boundaries.

Hamburg stands about 60 miles from the mouth of the Elbe, and is the chief port in the empire. Its manufactures consist of woollen, linen, cotton, and silk goods, tobacco and refined sugar; and its trade embraces almost every article of German commerce. The chief exports are grain, wool, cattle, German manufactures, and Rhenish wines. The population is about 250,000. *Cuxhaven*, at the mouth of the Elbe, is the outport of Hamburg, where the larger class of vessels unload. **Bremen**, on the Weser, about 40 miles from the sea, ranks next to Hamburg as a port. It has considerable manufactures of snuff, cigars, woollen, and cotton goods; besides numerous breweries and distilleries. It is also a great place for the embarkation of continental emigrants for America. *Bremerhafen* is its outport. The population is about 84,000. **Lubec** stands on the small river Trave, a few miles from its mouth. *Travemunde* is the outport. The population of Lubec is about 40,000.

Weimar is the chief town in the smaller Saxon states. It stands on an affluent of the Saale, a feeder of the Elbe, and is famous for the literary men, such as Goethe and Schiller, who have made it their residence. The population is about 14,000. **Jena**, a short distance to the south-east, is celebrated for its university which attained its highest prosperity towards the end of last century, when it numbered among its professors Schiller, Humboldt, Fichte, Schelling, and Griesbach. The battle of Jena was fought in 1806. **Coburg**, in the duchy of Saxe-Coburg-Gotha, is interesting for its connection with the royal family of England. The late Prince Albert was born at the fine ducal seat, *Rosenau Castle*, in the immediate neighbourhood. The population of Coburg is about 13,000. **Darmstadt**, the capital of the grand duchy of Hesse-Darmstadt, lies between the Rhine and Main, and about 15 miles south of Frankfort. It has a population of about 40,000. **Mainz**, on the left bank of the Rhine, nearly opposite the confluence of the Main, is a large place, and has considerable trade in corn, wine, and timber. Guttenberg, the inventor of printing, was born here in 1397, and a statue is erected to his memory. **Worms**, on the Rhine, further to the south, is a very old place, and has a decayed appearance. The Diet of Worms which excommunicated Luther was held in 1521.

LICHTENSTEIN, which is sometimes included among the states of Germany, is a small independent principality, with an area of about 60 sq. miles. It lies on the east side of the Upper Rhine, between Switzerland and Austria, and has a population of about 9000. The capital is **Vaduz.**

AUSTRO-HUNGARIAN EMPIRE.

BOUNDARIES AND EXTENT.—Austria, or as it is officially described, the "Austro-Hungarian Monarchy," is bounded on the north by Russia, Prussia, and Saxony; on the west by Bavaria, Switzerland, Italy, and the Adriatic Sea; on the south by Turkey; and on east by Russia. It lies between the parallels of 42° and 51° north latitude, and extends from 9° 30′ to 26° 20′ east longitude. Its length from east to west is about 800 miles; its average breadth about half that distance, and it embraces an area of 240,000 square miles.

There is no natural boundary between Austria and Russia except in the south-east where it is formed for a short distance by the river Pruth, and in the north where the upper course of the Vistula forms a part of the boundary line. The Sudetic Mountains and Riesengebirge separate it from Prussia; the Erzgebirge, from Saxony. The Rhine, for a short distance, separates it from Switzerland, and the Carnic Alps from Italy. Its boundary on the side of Turkey is well defined, being formed by the Dinaric Alps, the Save, the Danube, and the Carpathian Mountains.

COAST-LINE.—Though Austria is such a large country, and has a frontier more than 4000 miles in length, its coast-line is only about 500 miles, and is confined to the Adriatic Sea. Trieste, at the head of the Adriatic, is the chief port of the western provinces of the empire; Fiume is the chief port of the Hungarian provinces. Between the two is the peninsula of Istria, near the southern extremity of which stands Pola on a good natural harbour. The coast of Dalmatia is rocky and skirted with numerous elongated islands lying parallel to the shore. All these islands, like the adjacent mainland, are mountainous. There are several good harbours, including Cattaro, Ragusa, Spalatro, and Zara.

The Dalmatians are among the best sailors of the Mediterranean; in the Austrian Polar Expedition, sent out in 1872, the crew—most of whom were Dalmatians—showed remarkable skill and endurance.

SURFACE.—The surface of Austria is very varied in character, consisting of extensive plains, broad valleys, and high mountains. The mountain and hill ranges which are found in different parts of the country belong to two great systems:

the *Hercyno-Carpathian* chain and the *Alps*. The former commences at the Iron Gate, on the banks of the Danube, and sweeps round Transylvania and Hungary in a curve which again approaches the Danube near Presburg. The Sudetic Mountains connect the Carpathians Proper with the rest of the system, which includes the mountains which surround Bohemia as well as the plateau of Bavaria. That portion of the Alps which belongs to Austria comprises the Rhætian, Noric, Carnic, Julian, and Dinaric Alps.

The *Rhætian* Alps extend from **Ortler Spitz** to **Gross Glockner**, where the higher Alps may be said to terminate. The range, however, is continued through Styria in a north-east direction as the *Noric* Alps, and subsides in the *Leitha* chain near the Danube. The *Carnic* Alps throw off a spur which stretches into Hungary, between the Raab and Drave and is known as the **Bakony Forest**. The *Julian* and *Dinaric* Alps are not of great elevation; the latter, owing to its dark colour, is called by the natives Montenegro (black mountain). The Carpathians consist rather of mountain groups connected by elevated plains than of a continuous chain. The highest of these groups is that of Tatra, which rises under the 20th meridian, and which contains at least a dozen summits exceeding 8000 feet. **Ruska Poyano**, the culminating point, reaches nearly 10,000 feet. The average height of the Carpathians, however, is only about 5000 feet. The chain is steepest on the outward side of the curve; the long slope is towards the west, and spurs from the mountains cover the greater portion of Transylvania; the passes are narrow and difficult. The *Little Carpathians*, as that part of the chain is called which meets the Danube near Presburg, bounds the province of Moravia on the east; on the west this province is separated from Bohemia by the **Moravian Mountains**, so that it has mountains on three sides. Bohemia is surrounded by mountains. It is diamond-shaped, and on its four sides are the Moravian Mountains, the Riesengebirge, the Erzgebirge, and the Bohmer Wald respectively. Hungary, which embraces more than one-third of the whole empire, consists for the most part of a vast plain divided into two unequal parts by Bakony Forest. The surface scarcely rises 400 feet above the sea-level, and is often exposed to floods from the overflowing of the rivers. The soil is upon the whole very fertile, though there are sandy and marshy tracts in different parts.

MINERALS.—Austria is inferior to no other European country in mineral wealth. *Gold* and *silver* are worked in Transylvania and in the northern part of Hungary. Silver is also found in Bohemia, where also *tin* and *lead* are met with. The southern part of Hungary called the Banat produces *copper*, lead, tin, and *zinc*. *Coal* is very widely diffused, but the abundance of firewood has hitherto prevented it from being much worked. In Styria and Illyria *native steel* is met with, and the mines of Idria, in Carniola, are extremely rich in *quicksilver*. Various *precious stones*, including the opal, topaz, garnet, and amethyst, are found in Hungary and

Bohemia. *Marbles* of various kinds, and *porcelain clays* of the finest qualities, are met with, and *salt* is abundant in Galicia. There are upwards of one hundred mineral springs.

The two great systems to which the mountains of Austria belong contrast with each other in the produce of mineral wealth. The Hercyno-Carpathians are extremely rich in metals, while the Alps—except in their eastern offshoots—are remarkably destitute of metals; but it is precisely the eastern offshoots of the Alps which are found in Austria.

RIVERS.—The chief rivers of Austria include the middle course of the Danube, and the upper courses of the Elbe, Vistula, Dniester, and Adige.

The **Danube** enters Austria at an elevation of 800 ft., and descends 300 ft. before reaching Vienna; and as its channel is hemmed in by hills on either side, navigation is rather difficult. Before reaching Presburg, it is joined on the left bank by the March which drains Moravia. Further eastward it receives the Raab on the right bank and the Waag on the left. Between Gran and Waitzen the river again enters a mountainous country, but, on issuing from the defile, it turns to the south, and with a gentle current and numerous windings flows through the plain of Hungary. The Drave, which joins it on the right bank, rises in the Carnic Alps and brings with it the waters of an important tributary called the Mur. The Danube, now flowing to the south-east, next receives the Theiss, which brings the waters of the Szamos, Koros, and Maros. At Belgrade, the Danube is joined by the Save, which rises in the north-west of Carniola, and has a length of more than 400 miles. From Belgrade to the *Iron Gate* the Danube forms the boundary of Turkey, and the chief feeder which it receives is the Morava, which flows from the south.

LAKES.—There are some small lakes among the Alps and the Carpathians, and the northern part of Lake **Garda** is in Austrian territory; but by far the largest lakes are those of Balaton and Neusiedler, in Hungary. Lake **Balaton**, or *Platten See*, is about 50 miles in length, and its waters are slightly salt. Lake **Neusiedler**, at the foot of the Leitha Hills, is very shallow, and is fed by great marshes lying between it and the Danube. Its waters fluctuate very much, rising and falling without apparent cause, and sometimes they wholly disappear.

CLIMATE AND PRODUCTIONS.—The climate of such an extent of country varies with the latitude and nature of the surface. In the north it is similar to that of England, but drier, and more subject to extremes. In the plains of Hungary the heat is very great. Rain is abundant in the mountainous parts, but Central Hungary and (curiously enough) Dalmatia sometimes suffer from excessive droughts. Timber is very abundant, and all the mountains and hill ranges are clothed with forests of oak, pine, beech, and larch. The northern provinces of the empire are too cold for the growth of the vine, but it flourishes throughout Lower Austria and Hungary. Maize, rice, and cotton are grown in the southern parts of Austria; the fig, olive, and mulberry flourish on the mountain slopes round Trieste; and in the extreme south of Dalmatia palm trees are met with.

The brown **bear** and **wolf** inhabit the Alps and Carpathians; the **lynx** and wild **boar** are found in all the provinces. The **golden eagle** is met with in the Alps; **herons** (some of the choicest plumage) abound in the morasses of Hungary, where also there is an abundant supply of **leeches**, which form an important article of export. Bees-wax is an important product of the Buckowina; the *cochineal insect*, used as a red dye, is obtained from Galicia; *cantharides*, a small kind of fly, used as a blister, are found in several parts of Hungary; and *pearls* of the finest quality are fished in the Moldau, in Bohemia.

PEOPLE.—Though Austria is such a compact country, its inhabitants comprise a variety of races who differ from each other in language, character, and disposition. The most numerous are the *Slavonians* who form nearly one-half of the total population, and are met with in the provinces of the north, east, and south. Next rank the *Germans*, who number nearly 10,000,000, and form nearly the entire population in Upper and Lower Austria, and in Salzburg; they are also very numerous in Styria and Tyrol. The *Magyars* of Hungary, who are supposed to belong to the Asiatic family of nations, number about 5,400,000. The *Roumanians*, found chiefly in Transylvania, amount to nearly 3,000,000. They speak a language allied to the Latin, and are supposed to belong to the Mediterranean group of races. To these must be added a number of Albanians and Greeks; about half a million Italians found in Tyrol and in the maritime districts of Illyria and Dalmatia; about one million Jews scattered about in various parts of the empire, but most numerous in Bohemia, Moravia, Galicia, and Hungary; and a number of Gypsies, Turks, Armenians, English, and French in various parts. The total population of Austria is nearly 36,000,000.

About two-thirds of the entire population are Roman Catholics; more than 7,000,000 belong to the Greek Church, and there are about 4,000,000 Protestants. The Protestants are found chiefly in Hungary and Transylvania, and are most numerous among the Magyars. *Education* is not in an advanced state, though it is better in the German provinces than in other parts of the country. There are eight university towns: Vienna, Prague, Gratz, Olmutz, Innsbruck, Pesth, Lemberg, and Craçow.

The *government* was formerly an absolute monarchy, but since the Austro-Prussian war in 1866, some concessions have been made to popular liberty. There are two legislative assemblies, the Reichsrath and the Hungarian Diet, each having separate ministries. Austria is a great military power, but its navy is small. A district called the *Military Frontier* extends along the borders of Turkey from Transylvania to the Adriatic. The peasant proprietors lead a semi-military life, and in time of war furnish an army of 50,000 men. The tenure of the land depends on this military service.

Austria has no colonies.

INDUSTRY.—The chief branches of industry are agriculture, mining, and manufactures. About one-third of the land is said to be under tillage, but **agriculture** is but imperfectly understood. Wheat, rye, oats, and barley are grown in the north; and the vine and maize in the central and southern parts. *Rye* is the chief grain crop, and is generally used for food. Hungary and Galicia are the chief corn-growing provinces, but excellent wheat is also produced in Moravia and Bohemia. Tobacco is grown in various parts of Hungary; beetroot in Bohemia and Galicia, and flax and hemp also in Bohemia. Immense numbers of sheep are reared in the Hungarian provinces, especially in the Bukowina, and wool is an important article of export.

The chief **mining** districts are in Bohemia, Styria, Carinthia, and Carniola. There are valuable salt mines in Galicia.

The famous salt mines of Wielicza and Bochnia, to the south-east of Craçow, are the largest in the world. Within the mines are three chapels with pulpits, crucifixes, and various statues all sculptured out of the rock-salt.

The **manufactures** of Austria are not of great importance, and consist chiefly of linen, woollen, and cotton goods. The chief manufacturing provinces are Bohemia, Moravia, Silesia, and Upper Austria. Besides the making of textile fabrics, Bohemia is celebrated for its glass works.

The chief exports consist of corn, wine, wool, and timber, with glass, porcelain, and mineral produce, especially salt. Trieste and Fiume are the chief ports.

Internal Communication.—The commerce of Austria labours under the disadvantage of a small extent of coast-line, but considerable attention has been paid to internal communication. Some good high roads have been constructed in various parts, one of which extends from Czernowitz, in the Bukowina, to the shores of the Adriatic. More than sixty mountain passes have been made available for traffic. The *Stelvio Pass* opens a way between the Tyrol and Lombardy; and roads from Trieste and Fiume lead across the Julian Alps into Carniola and Croatia respectively. In the Danube and its tributaries Austria has above 4000 miles of river navigation, and nearly 8000 miles of railway have been opened.

PROVINCES AND CHIEF TOWNS.—The provinces of Austria are divided into two classes: *Cis-Leithan* and *Trans-Leithan.* The former send representatives to the Reichsrath; the latter to the Hungarian Diet. The terms "Cis-Leithan" and "Trans-Leithan" have reference to a small affluent of the Raab which forms for some distance the boundary between Lower Austria and Hungary, and thus marks the division between the German and Hungarian provinces.

PROVINCES.	TOWNS.
I. CIS-LEITHAN LANDS.	
1. Lower Austria,	Vienna.
2. Upper Austria,	Linz.
3. Salzburg,	Salzburg.
4. Styria,	Gratz.
5. Carinthia,	Klagenfurt.
6. Carniola,	Laybach, Idria, Adelsberg.
7. Coast District,	Trieste.
8. Tyrol and Vorarlberg,	Innsbruck, Botzen, Trent.
9. Bohemia,	Prague, Budweis, Töplitz, Carlsbad.
10. Moravia,	Brunn, Olmutz.
11. Silesia,	Troppau.
12. Galicia,	Lemberg, Cracow.
13. Bukowina,	Czernowitz.
14. Dalmatia,	Zara, Spalatro, Ragusa, Cattaro.
II. TRANS-LEITHAN LANDS.	
1. Hungary,	Buda-Pesth, Presburg, Tokay, Debreczin, Szegedin, Maria Theresianopel.
2. Transylvania,	Klausenburg, Kronstadt.
3. Croatia and Slavonia,	Agram, Fiume, Eszek, Peterwardein.

Vienna, the capital of the empire, stands on an arm of the Danube, where it is joined by the Wien. It is the great emporium of the western provinces of Austria, and has important manufactures of cottons, silks, velvets, and porcelain. The *Prater*, enclosed between two arms of the Danube, is perhaps the finest public park in Europe; it is about 4 miles long and 2 broad. The population of Vienna is about 840,000. In the neighbourhood, on the north side of the Danube, are the villages of *Aspern* and *Essling;* and a short distance further north is *Wagram*, all scenes of victories gained by the French (1809).

Linz, pleasantly situated on the right bank of the Danube, has manufactures of woollen, linen, silk, and cotton goods, and considerable trade; the population is about 35,000. **Salzburg**, on the Salza, an affluent of the Inn, is a dull-looking place in the midst of beautiful and romantic scenery. Haydn and Mozart were natives of this town. About 50 miles south of Salzburg, and in the neighbourhood of Gross Glockner, stands *Bad-Gastein*, a celebrated watering-place, at an elevation of 3000 feet. **Gratz**, the capital of Styria, has a romantic situation on both banks of the Mur, an affluent of the Drave. It has important manufactures of textile fabrics, and also of hardware and earthenware. It has a large share of the transit trade between Trieste and Vienna. The population is about 80,000. **Klagenfurt**, the chief town in Carinthia, stands on a small feeder of the Drave. About 30 miles to the west is the village of *Bleiberg*, celebrated for its lead mines.

Laybach stands on a river of the same name, which joins the Save. It has some manufactures of silk and porcelain, and considerable transit trade between Trieste and the northern provinces. About 25 miles to the west are the quicksilver mines of *Idria;* and to the south-west are the celebrated limestone caverns of *Adelsberg.* **Trieste**, at the head of the Adriatic, is the chief seat of the foreign trade of Austria, and one of the most important seaports on the Mediterranean. Shipbuilding is here carried on to a great extent, and there are also large soap-works, rope walks, and sugar refineries. The chief exports are olive oil, wines, and silks. The population is about 70,000.

Carinthia, *Carniola*, and the *Coast Region* are sometimes included under the name of *Illyria*.

VIENNA.

Innsbruck (*bridge of the Inn*), the capital of Tyrol, occupies a striking situation on both banks of the Inn, which is here crossed by a handsome suspension bridge. It has manufactures of silk, woollen, and cotton fabrics, and considerable transit trade between Italy and countries to the north of the Alps: to the south is the *Brenner Pass*, which is crossed by a railway from Innsbruck to Verona. **Botzen** is pleasantly situated on an affluent of the Adige: the neighbourhood is celebrated for its wine and fruits. **Trent**, further to the south, is chiefly celebrated for the council held here (1545-1565).

Prague, the chief town in Bohemia, stands upon the Moldau, a feeder of the Elbe. It has manufactures of cotton, linen, silk, and woollen stuffs, and is a great centre of trade. The population is nearly 160,000. **Budweis**, on the Moldau, about 75 miles south of Prague, has important cloth manufactures, and considerable trade in leather and shoes. **Carlsbad** stands in a romantic valley near the junction of the Tepel with the Eger. It contains the hottest springs in Europe, and is a favourite watering-place. **Toplitz**, about 50 miles to the north-east, ranks next to Carlsbad as a popular watering-place. Bohemia is famous for its battle-fields, among which may be mentioned *Sadowa*, so disastrous to the Austrians in 1866.

Brunn, near the confluence of two small feeders of the March, is the capital of Moravia. It has important woollen manufactures, and has been called the "Leeds of Austria." It has also manufactures of cotton, silk, glass, soap, and tobacco. About 14 miles to the east is the village of *Austerlitz*, famous for Napoleon's victory (1805). The population of Brunn is about 73,000. **Olmutz**, on the March, was the ancient capital of Moravia; it is a fortified city, and has a university. **Troppau**, on a feeder of the Oder, is the chief town in Silesia, and has manufactures of cloth and fire-arms.

Lemberg stands on an affluent of the Bug, a feeder of the Vistula, and is the chief town in the province of Galicia. Being situated between Odessa and Dantzic, it is the emporium for much of the produce of South Russia and Roumania, and has large corn markets. The population is nearly 90,000, a large portion of whom are Jews, who are very numerous in this province. **Cracow** stands in a beautiful valley on the left bank of the Vistula, and is surrounded by very picturesque scenery. A short distance to the west is an artificial tumulus erected to the memory of the Polish leader, Kosciusko. To the south-east are the famous salt mines of *Wielicza* and *Bochnia*. The population of Craçow is about 50,000. **Czernowitz**, the chief town in Bukowina, stands on the right bank of the Pruth, not far from the Russian frontier. It has a population of 20,000. The chief towns of Dalmatia are situated on the sea-coast. **Zara** is the seat of the provincial government. **Spalatro**, a larger place, has a population of only 10,000. In the neighbourhood are the extensive ruins of a palace where the Emperor Diocletian resided after his abdication.

Buda-Pesth, the capital of Hungary, has a population of 250,000. Buda, on the west side of the Danube, is built at the extremity of a spur from the Bakony Forest range. It is an old-fashioned place, and carries on considerable trade in wines. A fine suspension bridge connects it with Pesth, one of the handsomest towns in Austria. Pesth has manufactures of silk, woollen, leather, tobacco, and meerschaum pipes. **Presburg**, the ancient capital of Hungary, stands on the Danube near the confluence of the March. It has some manufactures of woollens, saltpetre, and tobacco, and a population of 40,000. *Schemnitz*, to the north-east of Presburg, and due north of Buda-Pesth, has valuable mines of gold and silver, and a famous mining school. **Tokay**, on the Theiss, is a small place, but is celebrated for its wines. **Debreczin**, to the south of Tokay, is the centre of considerable trade, and has a population of 46,000. Its streets, however, are unpaved, and most of the houses are only one storey high. It has four large annual fairs.

Szegedin, on the Theiss, near the junction of the Maros, is a large town, and has manufactures of tobacco, soap, and cloth. The population is 70,000. To the south-west is **Maria-Theresianopel**, which resembles rather a collection of villages than a town. The inhabitants are engaged in raising large numbers of sheep, cattle, and horses. The population is nearly 60,000. **Klausenburg**, on the Szamos, a feeder of the Theiss, is the capital of Translyvania; but **Kronstadt**, in the south-east of the province, is a more important place, and carries on a considerable trade with Moldavia and Wallachia. **Agram** is the capital of Croatia; **Eszek**, of Slavonia. **Fiume**, at the head of the Gulf of Quarnero, is the chief port of the Hungarian provinces. It has manufactures of tobacco, paper, and a liqueur called *rosoglio;* and exports corn and other agricultural produce. **Peterwardein** is one of the strongest fortresses in the Austrian Empire. It derives its name from Peter the Hermit who marshalled here the rabble which preceded the First Crusade (1095).

TURKEY, OR THE OTTOMAN EMPIRE.

BOUNDARIES AND EXTENT.—Turkey is bounded on the north by Austria; on the east, by the Black Sea; on the south, by the Sea of Marmora, the Archipelago, and Greece; on the west, by the Mediterranean, the Adriatic, and Austria. Its length, from east to west, is about 700 miles; its extreme breadth, from north to south, is about the same, and it has an area of 150,000 square miles.

The Turkish Empire embraces all the countries under the authority of the Sultan, and includes Turkey in Europe, Asiatic Turkey, Egypt, Tripoli, and Tunis. The total area of this vast territory is about 2,000,000 square miles, and the population is about 45,000,000. Egypt, Tunis, and some of the provinces of Turkey in Europe are, however, only nominally subject to the Sultan.

The Berlin Congress (1878) made some important changes in European Turkey. The withdrawal of Servia and Roumania from the rule of the Sultan reduced its dimensions by one-fourth. It was also proposed to extend the northern boundary of Greece to the banks of the Selembria, but to this the Sultan and his advisers have not yet agreed.

COAST-LINE.—The most striking object on the west coast is **Cape Glossa** or Linguetta, on the Strait of Otranto. North of this cape the coast is low and sandy, and the chief harbour is the Gulf of Drino. South of Linguetta the shores are rocky and indented, and on the borders of Greece there is the large Gulf of Arta, which extends inland for a distance of 45 miles.

It was near the entrance of this gulf that the celebrated battle of Actium, between Augustus and Mark Antony, was fought, B.C. 29.

Crossing the peninsula between Turkey and Greece we reach the Gulf of Volo. From this point the coast runs north-west to the large gulf of Salonica, and is bold and rocky. Between the gulfs of Salonica and Contessa a peninsula projects into the sea, and dividing into three, forms the gulfs of Cassandra and **Monte Santo**: the first peninsula terminates in Cape Paliari, the second in Cape Drepano, and the third in Cape St. George.

The third peninsula is mountainous and rugged, being covered with spurs from Mount Athos, which, near its southern extremity, attains an elevation of 6350 feet. The peninsula is connected to the mainland by a low isthmus not more than a mile and a half across, and only about fifteen feet above the sea-level. When Xerxes invaded Greece he cut a canal through this isthmus, and traces of it are still visible. Nearly the whole of this peninsula has been occupied, from a very early period, by a number of Greek monasteries, hence the modern name of the peninsula—*Monte Santo.*

From the Gulf of Contessa the coast runs eastward to the Gulf of Saros, and then we meet with the long tongue of land which forms the western side of the **Dardanelles.** The entrance to this strait—the ancient *Hellespont*—is two miles wide, but the narrowest part of the channel is only three-quarters of a mile in width, and here stood the castles of the Dardanelles from which the strait derives its modern name. Passing through the Sea of **Marmora** we enter the Straits of Constantinople—the ancient *Bosphorus*—which lead into the **Black Sea.** The east coast of Turkey, washed by the Black Sea, is low and sandy, and there are no harbours of importance, except perhaps that of Varna, whence the Crimean expedition started in 1854. The chief capes on this part of the coast are **Emineh** and Kalagria.

SURFACE AND MINERALS.—The mountains of Turkey seem to radiate from a central mass called *Tchar Dagh,* which attains an elevation of nearly 10,000 ft. On the east is the *Balkan Range,* which is in reality a prolongation of the mountains of Transylvania. The range starts from the Danube at the Iron Gate, and runs at first southward, forming the eastern boundary of Servia. It then curves round to the east, separating Bulgaria from Roumelia, and ultimately terminates in Cape Emineh, on the shores of the Black Sea. South-west of the Balkans is the *Despoto Dagh,* or Rhodope Mountains, which run south-east from the source of the Isker to the coast near the mouth of the Maritza. To the west of the Tchar Dagh are the *Dinaric Alps,* which cover the greater parts of Bosnia, Herzegovina, and Montenegro; while to the south runs the *Pindus Range,* which is continued into Greece. The passes across these various mountain chains are numerous but generally difficult, consisting for the most part of narrow and deep defiles.

The western half of Turkey consists chiefly of high plateaus intersected by narrow valleys. Eastward of Tchar Dagh, however, there are extensive plains. The *Plain of the Lower Danube,* between the Balkans and Carpathians, includes the provinces of Bulgaria, Wallachia, and Moldavia, and is a region of great fertility. The valley of the Maritza forms another fertile plain of considerable extent; and to the west of the Despoto Dagh is a large extent of level land drained by the Strumar and Vardar. The *Plain of Thessaly*, drained by the Selembria, is bounded north and south by spurs from the Pindus range. Immediately above its mouth the Selembria flows through a narrow valley, bounded on one side by Mount Lacha, the ancient **Olympus**, and on the other by **Ossa**, now Mount Kissovo. This narrow defile, now called the *Wolf's Mouth*, formed the ancient Vale of Tempe. South of Ossa, and connected with it by a ridge of hills, is Mount Zagora, the ancient **Pelion.** On the western side the Pindus range throws off a spur called the **Khimera** Mountains, which terminates in Cape Linguetta.

The mountains of Turkey seem to be rich in mineral wealth, and the products include iron, copper, lead, silver, sulphur, salt, and alum, but the minerals have only been worked to a limited extent.

RIVERS AND LAKES.—The chief river of Turkey is the lower course of the *Danube*, which is navigable throughout its extent; next ranks the *Maritza*, about 320 miles in length, which is navigable as far as Adrianople, except during the summer months. Among the numerous other streams may be mentioned the *Struma*, *Vardar*, and *Selembria*, which flow into the Archipelago; and the *Voyussa*, *Drin*, *Boyana*, and *Narenta*, which flow into the Adriatic. The lakes lie chiefly in Western Turkey, and include *Scutari*, drained by the Boyana; *Ochrida*, the source of the Drin, and the *Janina*, further south, which has no visible outlet.

The Save, which forms for some distance the northern boundary of Turkey, receives several streams on the right bank, including the Bosna and Drin. It joins the Danube at Belgrade, and the main stream now forms the boundary line as far as the Iron Gate. In this part of its course the **Danube** receives the Morava, which rises near Tchar Dagh, and drains the greater portion of Servia. The *Iron Gate* is a gorge about 2000 yards in length, formed by the Danube in bursting through the mountains. About three miles below Gladova are the remains of a bridge erected by the Emperor Trajan. Judging from the buttresses which still remain, it must have exceeded 3000 ft. in length. The general direction of the Danube, after leaving the Iron Gate, is at first southward. Some distance below Widdin, however, it turns to the east, and follows this direction as far as Tchernavoda. In this part of its course it receives several streams, among which are the Isker on the right bank, and the Aluta on the left. At Tchernavoda the Danube turns to the north until it receives the Sereth. It then turns again to the east, and having been joined by the Pruth, shortly afterwards forms a delta, and enters the Black Sea by several mouths. Round the outlet of the river vast quantities of mud, brought down by its current, have accumulated, and it is with difficulty that the Sulina mouth, the principal channel, is kept open for shipping.

The total length of the Danube, from its source in the Black Forest, is about 1700 miles, and its basin has an area of 350,000 sq. miles: about one-third of this area belongs to Turkey. The navigation of the Danube in

Turkey, and the execution of public improvements connected with it, are placed under the control of an international commission, representing the great European powers.

Climate and Productions.—The climate in that part of Turkey which is watered by the Danube resembles that of Central Europe; and owing to exposure to the north-east winds, the summers are very hot and the winters severely cold. At Bucharest the difference between the hottest and coldest months in the year is 48°, while in London it is less than 28°. At Constantinople also the difference is considerable, and the climate is very variable. In other parts of Turkey the winters are less severe, and the summer temperature is in many cases diminished by elevation. The air throughout the country is generally dry, and the climate healthy.

North of the Balkans the fruits and vegetables are those of Central Europe, and the forests consist of pine, beech, oak, lime, and ash. South of the great mountain chain, the maple, almond, chestnut, and various evergreens flourish, and there is a profusion of roses and other flowers. In Thessaly and Epirus the olive becomes common, and the mulberry, orange, and fig are cultivated. The vine is grown throughout Turkey, but in the northern provinces the grape does not ripen well. The forests give shelter to numerous wild animals, including boars, bears, wolves, lynxes, and wild cats, as well as deer of various kinds, mountain goats, and wild oxen.

People. — The total population of Turkey is about 10,500,000, the greater proportion of whom are Slavonians. The Turks do not form more than one-seventh of the whole population, and they are most numerous in the provinces of Roumelia. South of the Balkans there are a large number of Greeks, and in Wallachia, and in some parts of Moldavia, the inhabitants speak a language allied to the Latin tongue. The natives of Albania are a race called Arnauts. They are active, industrious, and warlike, and differ from their neighbours in dress and language. There are more Gypsies in Turkey than in any other country of Europe; and Jews are numerous.

The Turks are followers of Mahomet, and in Bosnia and other parts many of the Slavonians, on the Turkish conquest, adopted that faith, but the great majority of the people belong to the Greek Church. Education is everywhere very defective. The Turks are essentially an Asiatic race, and differ in many respects from the other nations of Europe. Little attention is paid to literature: sculpture and painting are discouraged as tending to idolatry. The women, when at home, are confined to certain apartments, into which a stranger may not enter; and they never appear in public without being thickly veiled. The men wear turbans and loose-flowing robes, and each one is allowed by the Koran to have four wives if he is rich enough to support them.

The government of the Turkish Empire is a despotism; some attempts, however, have been recently made to form a constitutional government. The sovereign is styled the *Sultan*, his chief minister the *Grand Vizier*, and his court the *Porte*. The whole empire is divided into governments and provinces. In Europe there are seven governments, including the island of Crete.

INDUSTRY.—Almost every branch of industry is in a backward condition. The soil is for the most part fertile, but little progress has been made with *agriculture*. In the southern provinces the quantity of grain produced is not sufficient for the home consumption, but in the basin of the Danube large crops of maize, wheat, and barley are raised. In Bosnia, tobacco, hemp, and flax are grown, and in Albania fruits of all kinds are abundant. South of the Balkans the olive, vine, and cotton plant flourish. The rearing of sheep and cattle is, however, the most important branch of agriculture. The pastures of Bulgaria fatten extensive herds of cattle, while sheep and goats are reared in large numbers in Roumelia, Thessaly, and Albania.

The *manufactures* are unimportant, and the chief supplies are imported. Cotton and silk fabrics are made at Constantinople, Salonica, and other places; leather is prepared at Gallipoli; and at Shoumla, and other towns in Bulgaria, there are metal works. Adrianople is celebrated for the attar, or otto, of roses.

The exports from Turkey are chiefly raw cotton, raw and spun silk, wool, olive-oil, morocco leather, horses, cattle, fruits, and attar of roses: the imports, manufactured goods, tropical produce, and corn. The trade with England is very considerable, as English goods are transferred through Constantinople to Asiatic Turkey, and even to Persia. The trade is chiefly in the hands of English, French, Armenian, and Greek merchants.

Internal communication is very defective. Few of the roads in Turkey are practicable for carriages, and goods are conveyed chiefly by horses, asses, or mules. On the most frequented roads khans, or caravanserai, are found instead of hotels. These *khans* are merely open court-yards supplied with water, where the travellers may rest and find a kind of shelter for the night. There are few railways, and these are confined to Bulgaria.

PROVINCES AND CHIEF TOWNS.—The divisions marked generally on a map are not those used for administrative purposes, but as they are those best known, it may be convenient to retain them.

PROVINCES.	TOWNS.
Roumelia, ...	Constantinople, Adrianople, Salonica, Gallipoli.
Eastern Roumelia,	Philippopoli, Kezanlik.
Thessaly, ...	Yeni-shehr, Fersala.
Albania, ...	Scutari, Janina, Valona, Arta.
Herzegovina, ...	Mostar, Trebigne.
Croatia, ...	Banialouka.
Bosnia, ...	Bosna-serai, Yeni-bazar.
Bulgaria, ...	Sophia, Shoumla, Rustchuk, Silistria, Widdin.
Candia, or Crete, ..	Candia.

CONSTANTINOPLE.

Constantinople, or *Stamboul*, as the Turks call it, has a splendid situation, but the streets are narrow and filthy. It contains some fine public buildings, however, such as the Seraglio, or Imperial Palace, and the cathedral of St. Sophia, now converted into a mosque. Many of the mosques also display great beauty, as they are generally surrounded with trees and fountains. On the north side of the city is the Golden Horn, one of the finest harbours in the world. It is capable of containing 1000 sail of the line, and is of depth sufficient to admit of goods being landed on the quays from the largest ships. On the north-east side of the harbour are the suburbs of Galata and Pera, where the *Franks*, as the English, French, and other nations of Europe are called, reside. The inhabitants of Stamboul itself are Turks, Armenians, Greeks, and Jews, who have particular quarters allotted to them. The population of Constantinople exceeds one million. *Scutari*, on the Asiatic shore, is considered a suburb.

Adrianople, on the river Maritza, is the second city in Turkey. It stands in the centre of a fine plain celebrated for the produce of *attar of roses*, and it has some important manufactures of leather. The population amounts to 100,000. **Salonica**, the ancient Thessalonica, stands at the head of a gulf to which it gives its name. It has manufactures of leather, cotton, carpets, silk, and metal goods, and ranks next to Constantinople as a port. The population is 70,000. **Gallipoli**, on the western side of the Dardanelles, is celebrated for the manufacture of morocco leather. It was here that the Turks landed, on their entrance into Europe in 1355. **Philippopoli**, the capital of Eastern Roumelia, stands on the upper course of the Maritza, and has manufactures of silks, cotton, and cloth, and a population of 30,000. **Kezanlik** stands in the neighbourhood of the *Schipka Pass*, which was the scene of such severe fighting during the Russo-Turkish war.

Yeni-shehr (Larissa), the principal town in Thessaly, is delightfully situated on the banks of the Selembria. It has manufactures of silk, cotton, leather, and tobacco. **Fersala**, the ancient *Pharsala*, about 25 miles to the south, is memorable for the battle in which Cæsar defeated Pompey, B.C. 48. **Scutari** and **Janina** both stand on the shores of lakes to which they give their name. **Valona**, or **Avlona**, also stands on a small lake to the north of Cape Linguetta. It is the chief port on the Albanian coast. Scutari has a population of 40,000; Janina, of 36,000; Valona is a much smaller place. **Mostar**, the capital of Herzegovina, stands upon the river Narenta. **Bosna-serai**, the capital of Bosnia, is the centre of considerable trade, and there are some manufactures of fire-arms, leather, and cotton goods: the population is 60,000.

Sophia, the capital of Bulgaria, lies on the north side of the Balkans, not far from the river Isker. It has a population of 50,000. **Shoumla**, in the eastern part of the province, stands on the line of one of the roads leading across the Balkans, and is a fortress of some strength. It has also some important metal works: the population is 30,000. **Varna** is an important fortress on the Black Sea. **Silistria**, on the Danube, is memorable for the siege it sustained against the Russians in 1854. **Nicopoli** is chiefly memorable for the great battle fought in the vicinity between the Turks under Bajazet, and the Hungarians and their allies under King Sigismund, when the latter sustained a complete defeat (1396). *Rustchuk*, *Sistova*, *Nicopoli*, and *Widdin* were formerly fortified towns, but it was decided by the Berlin Congress that all the fortresses and fortifications on the Danube below the Iron Gates should be razed, and that no ship of war should be allowed to navigate that part of the river.

Candia.—Of the many islands belonging to Turkey, Candia, the ancient Crete, is the only one of importance. It is about 160 miles in length, and has an area of 3300 square miles. The interior is mountainous, some of the summits reaching an elevation of 8000 ft., but there are plains and valleys of great fertility. The hills are covered with forests, and the low grounds produce olive oil, silk, wine, and fruits of various kinds; and there is a valuable sponge fishery round the coast. The population amounts to about 210,000, two-thirds of whom are Greeks. The chief town is *Candia*, which has a population of about 12,000.

The Berlin Congress decided that Montenegro, Servia, and Roumania should be independent principalities. Bulgaria was constituted a tributary principality with a Christian government and a national militia; and a new province called Eastern Roumelia was constituted south of the Balkans, which is to be placed under a Christian Governor-general, but shall remain under the direct military and political authority of the Sultan. Roumania was permitted to cede to Russia a portion of Bessarabia, bounded on the west by the Pruth, and on the south by the Kilia mouth of the Danube, which had been taken from that country by the Treaty of Paris, while Roumania was compensated by receiving that portion of the Dobrudscha which lies north of a line drawn from Silistria to Mangalia on the Black Sea. The upper valley of the Morava, as far south as Vranja, was added to Servia, while Montenegro received also some slight increase of territory, including the port of Antivari.

MONTENEGRO is a small principality between Albania and Herzegovina, with an area of about 3000 square miles, and a population of about 200,000. The surface for the most part consists of a series of elevated ridges, generally covered with forests. Agriculture forms the chief occupation of the people, and maize, potatoes, and tobacco are the chief products. *Cetigne* is the capital, and *Antivari* the only port.

SERVIA has an area of nearly 17,000 square miles, with a population of 1,400,000. The surface is mountainous, and contains extensive forests and uncultivated heaths. The valleys are fertile, but there is little cultivation. The chief trade is with Austria and the Turkish provinces, the exports being timber—especially oak—cattle, and grain. **Belgrade**, the capital, stands at the confluence of the Save and Danube, and has a population of 26,000.

ROUMANIA consists of the principalities of Wallachia and Moldavia, which were united in 1861. The country is for the most part level, and the soil of extraordinary fertility. Large quantities of grain and cattle are raised; forests are extensive, and vines and fruits of various kinds are abundant. The climate, however, is very extreme. The chief exports are wheat, barley, maize, rock-salt, and cattle; the imports, manufactured goods chiefly. The chief towns are Bucharest, Jassy, Galatz, and Ismail. **Bucharest**, the capital, stands on a feeder of the Danube, in the midst of a fertile plain. The population amounts to 200,000. **Jassy**, the chief town in Moldavia, stands on an affluent of the Pruth: the population is 60,000. **Galatz**, on the Danube, between the confluences of the Sereth and Pruth, is the chief commercial port of the principality: the population is 36,000. **Ismail**, on the delta of the Danube, is an important military station, and is strongly fortified.

GREECE.

Physical Character.—The kingdom of Greece consists of three portions: the mainland, the Archipelago, and the Ionian Islands. The total area, including the islands, is nearly 20,000 sq. miles. The mainland consists of two portions connected together by the isthmus of Corinth. On the western side of the isthmus are the gulfs of Patras and Lepanto connected by a narrow channel; on the east the Gulf of Egina. The southern portion of the mainland, known in ancient times as the Peloponesus, and in modern times as the *Morea*, bears some resemblance to a mulberry leaf. On the western side is the Gulf of Arcadia; on the east the Gulf of Nauplia; while in the south there are three small peninsulas separated by the gulfs of Koron and Kolokythia. The three peninsulas terminate in capes *Gallo*, *Matapan*, and *Malea* respectively; and the only other important headland in Greece is that of *Cape Colonna* to the south-east of Athens.

The shores of Greece are bold and rocky as the greater portion of the interior is covered with mountains. Spurs from the Pindus range cover the northern part of the country, and **Mount Guiona** exceeds 8000 ft. in height. The classic summits of *Oeta*, *Parnassus*, *Helicon*, and *Hymettus* are also in this part of the country. The isthmus is low and flat, but the mountains reappear in the Morea, the interior of which is a table-land which throws off spurs to the south. **Mount St. Elias**, the culminating point in the Morea, has an elevation of 7900 ft. The scenery of Greece is remarkable for its picturesque beauty, as it contains within a small compass all the charms of land and water, lofty mountain, and fertile plain. The minerals include marble and good building stone; lead and iron are also met with.

Streams are numerous in Greece, but none of them navigable; and there are some small lakes in the Morea. The largest body of inland water is *Lake Topolias*, to the north-west of Athens. In winter it is about 15 miles long and 10 broad, but in summer it is reduced to a mere swamp. The climate is warm and delightful, the sky being often cloudless for weeks together, and the air is pure and transparent. On the level parts near the sea snow is seldom seen, the winter generally is of short duration, and the corn ripens in May. There are extensive forests, wolves and other wild animals are numerous, and wild bees are abundant in the neighbourhood of Hymettus, as in ancient times.

People and Industry.—The population amounts to nearly 1,500,000. The inhabitants are a mixed race, including, besides the descendants of the ancient Greeks, a number of tribes belonging to the Slavonic race. The Arnauts, or Albanians, are numerous in northern Greece, and generally preserve their own national dress, manners, and language. The Greeks are a clever and active race, and constitute the trading and literary classes: they also make capital sailors. Education is very widely diffused, and there is a university at Athens. The language of modern Greece is called *Romaic*, and bears a great resemblance to the ancient Greek tongue. The government is a limited monarchy, and the established religion is that of the Greek Church.

Only about one-half the country is capable of cultivation, but the soil is naturally fertile: agriculture, however, is in a backward condition. The chief articles of cultivation are wheat, maize, barley, and other grains, and rice in some of the marshy districts. The olive is cultivated everywhere, and comes to great perfection; the *currant* grape is found on the west coast and in the Ionian Islands; the mulberry is grown in many parts, and cotton and tobacco are also cultivated.

The interior of the Morea is better suited to pasturage than tillage, and sheep and goats are numerous. Oxen are scarce, and are chiefly used with the plough: buffaloes are also used for the same purpose. The manufactures are of little importance, and are chiefly domestic: each peasant family makes coarse articles of clothing for themselves, but the finer articles of manufacture are imported. *Carpets* are made in the island of Andro; *sail-cloth* and *straw hats* in Sifanto, and *shipbuilding* is carried on in Syra. The commerce, however, is considerable, as the Greeks are engaged in a large carrying trade between the countries of Western Europe and the eastern parts of the Mediterranean. The exports consist chiefly of raw produce, including cotton, silk, tobacco, currants, figs, and other fruit; olive oil, gum, bees-wax, honey, wool, sponge, and valonia bark used in tanning. The imports are manufactured goods and colonial produce chiefly. The means of internal communication are very defective, but good roads and railways are in process of construction.

TOWNS.—The principal towns are as follows:—

NORTHERN GREECE—Athens, Livadia, Thiva, Lepanto, Missolonghi.
MOREA—Nauplia, Patras, Tripolitza, Corinth, Navarino.
ARCHIPELAGO—Hermopolis, Egripo, Hydra, Spezzio.

Athens, the capital of Greece, stands about 5 miles from the eastern shore of the Gulf of Egina. It is more interesting for the remains of its former greatness than for its present importance. Among the monuments of antiquity still remaining is the citadel, called Acropolis, containing the remains of the Parthenon, a temple dedicated to Minerva. A short distance to the west of this is the Areopagus, or Mar's

RUINS OF ACROPOLIS, ATHENS.

Hill (Acts xvii. 19-22). The present population is 48,000. Twenty miles to the north-east of Athens are the village and plain of *Marathon*, celebrated for the victory gained by the Athenians over the Persians (B.C. 490). On the west, in the Gulf of Egina, is the Island of *Salamis*, famous for the great naval victory won ten years later, when the fleet of Xerxes was almost entirely destroyed.

Livadia stands near the western shore of Lake Topolias. About 40 miles to the north is the celebrated *Pass of Thermopylæ*, between Mount Oeta and the sea, where Leonidas with 300 Spartans engaged with the whole Persian army (B.C. 480). South-east of Livadia is **Thiva**, the ancient Thebes, now a place of no importance. **Lepanto** is a small port on the narrow channel which connects the gulfs of Lepanto and Patras. The Gulf of Lepanto is celebrated for a great naval battle in 1570, when the Turks lost 35,000 men. **Missolonghi**, on the Gulf of Patras, is the place where Lord Byron died (1824).

Nauplia, at the head of a gulf on the eastern side of the Morea, is a place of considerable trade, and has a population of 15,000. Its citadel, built on a rock 800 feet high, has been called the Gibraltar of Greece. **Tripolitza** stands on a table-land in the interior, and has a population of about 8000. About 30 miles to the south are the remains of the ancient *Sparta*. **Patras**, on the south side of the gulf to which it gives name, is a large straggling village with considerable trade. **Corinth**, on the south-east shore of the Gulf of Lepanto, is now chiefly in ruins. **Navarino**, on the south-west coast, is famous for the naval battle in 1827.

Hermopolis, on the Island of Syra, is the principal commercial centre in the Archipelago, and has steam communication with Malta, Constantinople, and Smyrna. The population is nearly 20,000. **Egripo** is the chief town on the island of Negropont or Eubœa. This island, which is about 100 miles in length, is separated from the northern part of Greece by a channel which, in its narrowest part, is only 50 yards wide. To the north of this narrow passage is the Talanti Channel, to the south that of Egripo. In the middle of the passage rises up a rock, on which a castle is built, and this castle is connected with the shores on either side by means of a bridge. Egripo stands on this narrow part of the channel. **Hydra**, on an island of that name, between the gulfs of Nauplia and Egina, is a handsome and well-built town; the inhabitants make capital sailors.

The IONIAN ISLANDS, which lie on the western side of Greece, consist of seven principal islands—Corfu, Paxo, Santa Maura, Ithaca, Cephalonia, Zante, and Cerigo—and a number of islets. They formerly constituted a Republic under the protection of Great Britain, but in 1863, at their own request, they were annexed to the kingdom of Greece. The inhabitants are chiefly Greeks, and number about 250,000.

The chief productions of the islands are the olive, the vine, and the currant; wheat, maize, and other grains are grown, but as the islands are mountainous the extent of arable land is small. **Corfu**, the largest of the group, produces abundance of olive oil. The town of *Corfu* is the seat of a university, and has a population of 17,000. The staple production of **Santa Maura** is salt. **Ithaca** is noted for the excellence of its wines; it was celebrated in ancient times as the kingdom of Ulysses. **Cephalonia** and **Zante** are the chief currant-producing islands. **Cerigo**, east of Cape Matapan, is celebrated for the quality of its honey and the number of its horned cattle.

THE RUSSIAN EMPIRE.

BOUNDARIES AND EXTENT.—Russia is bounded on the north by the Arctic Ocean; on the west, by Scandinavia, the Baltic, Prussia, Austria, and Roumania; on the south by the Black Sea, the Caucasus Mountains, and the Caspian; and on the east, by the Ural river, the Ural Mountains, and the river Kara. Its length, from north to south, is about 1800 miles; its extreme breadth is nearly the same, and the total area exceeds 2,000,000 square miles, or more than one-half of the entire continent.

The Russian Empire extends from the Baltic Sea to the Pacific, and embraces an area of more than 8,000,000 square miles, with a population of 85,000,000. By far the larger portion of this vast area lies in Asia, though the bulk of the population belongs to the European portion. It is sometimes difficult, however, to draw the exact boundary between European and Asiatic Russia, since some of the provinces—as Caucasia for example—belong to both continents.

COAST-LINE.—The northern coast of Russia is of considerable extent, but the harbours are frozen for eight months in the year. The chief opening is the **White Sea**, at the entrance to which is the *Kanin* Peninsula, on the east, and the *Kola* Peninsula on the west. The White Sea contains the gulfs of Mezen, Archangel, Onega, and Kandalaksha. The Russian coast terminates on the west at **Varanger Fiord.** Turning now to the **Baltic** we find a rugged coast skirted with numerous islets, forming the eastern boundary of the Gulf of Bothnia and the northern shore of the Gulf of Finland. Sveaborg, Viborg, and Kronstadt are strongly fortified in order to protect the Russian capital. On the southern shore we notice Narva, where Charles XII. defeated Peter the Great. Leaving the Gulf of Finland we pass the islands of Dago and Œsel, and reach the large shallow gulf of Riga. The shore now runs south to Kurische Haff, where the coast of Prussia commences.

The coast of Russia on the **Black Sea** is low and flat to the west of the Crimea; the shores of the Sea of Azof are also low and sandy, but the remainder of the coast is bold and rocky. The peninsula of the Crimea is joined to the mainland by the isthmus of *Perekop*, which is only five miles across.

The **Crimea** is chiefly interesting to us owing to the war which ended in the taking of Sebastopol. It has an area of 10,000 square miles, of which nearly three-fourths is steppe land. In the southern part, however, there is a spur from the Caucasus Mountains, and in the south-east some summits attain an elevation of 5000 ft. The allied English and French armies landed at *Eupatoria* in September 1854. On their way to Sebastopol they were opposed by the Russians on the banks of the *Alma*, but they forced the passage. The siege of *Sebastopol* lasted eleven months, during which three great battles were fought, those of *Balaclava*, *Inkerman*, and the *Chernaya;* at length the fortress was taken by storm in September 1855.

Passing through the straits of *Yenikale* we enter the **Sea of Azof**, which in no part exceeds 40 feet in depth. A long slip of land, called the *Tongue of Arabat*, separates the Sea of Azof from the *Putrid Sea*, which, however, at times is little better than a marsh. From the strait of Yenikale the Russian coast runs south-east, and terminates at Poti, near the mouth of the river Rion.

SURFACE.—The whole of Russia, with the exception of the plateau of Finland, consists of a level plain interrupted only, near the source of the Volga, by the *Valdai Hills*, which, in their highest summit, do not exceed 1120 ft. The **Caucasus** Mountains form a well-defined boundary between Europe and Asia, and Elburz rises 3000 ft. higher than Mont Blanc; but the **Ural** Mountains do not average more than 3000 ft. in elevation, and the descent on both sides is so gradual that it is sometimes difficult to know where the plain begins.

To the north of the 60th parallel the surface has a gradual slope to the Arctic Ocean, and is in a great part barren. In the extreme north the dreary **tundras** consist of vast tracts of heath and moss, swampy in summer and frozen in winter. Finland is a plateau covered with lakes interspersed with rocks and sandhills. The central part of Russia is clothed with immense forests of valuable timber, but in the west there is an extensive marsh drained by the Pripet, a tributary of the Dneiper. In the south-west, along the middle course of the Dneiper, the soil is of the greatest fertility, and immense quantities of wheat are produced, and afterwards exported from Odessa and Dantzic. In the south and south-east is the region of the **steppes** or grassy plains. To the west of the Don, the soil, though thin, is of good quality, and produces luxuriant grass; timber, however, is very scarce. Between the Black and Caspian Seas the soil is almost hopelessly barren. It abounds in small salt lakes, and in some parts saline incrustations cover the ground like hoar frost. In winter the steppes are dreary wastes of snow, inhabited chiefly by wolves. In spring, countless flowers appear, and numerous herds of horses and cattle find pasture; but as summer advances the plains are parched with dust, and cattle by thousands perish from thirst. Except along the banks of the rivers the steppes are but thinly inhabited; here and there, however, villages are met with, generally built in natural hollows or depressions in the surface.

MINERALS.—Russia is rich in minerals, including gold, silver, and precious stones; coal, iron, platinum, copper, and salt. In the Ural Mountains, however, which are the chief source of mineral wealth in the country, the mines are chiefly on the Asiatic side. *Iron* is abundant on the western shores of Lake Onega, and in the southern part of Lapland. Both *coal* and iron are also found in the basin of the Oka, a tributary of the Volga. An immense bed of coal is now being worked in the valley of the Donnetz, and it is also abundant in the upper basin of the Vistula. *Salt* is obtained from the saline lakes in the steppes.

RIVERS.—The chief rivers are the *Petchora, Mezen, Dwina,* and *Onega,* flowing into the Arctic Ocean; the *Neva, Dwina, Niemen,* and *Vistula,* flowing into the Baltic; the *Dneister, Dneiper, Don,* and *Kouban,* flowing into the Black Sea; and the *Volga, Ural,* and *Terek,* flowing into the Caspian. The Niemen, Vistula, and Dneister, are only Russian rivers in parts of their course, and one-half of the basin of the Ural is in Asia, but the entire basins of the other rivers belong to European Russia. The Don does not flow directly into the Black Sea but into the Sea of Azof, which is an arm of it.

The **Volga** has its source in a small lake on the eastern slope of the Valdai Hills, at an elevation of nearly 900 ft. Its course is at first north-east and then east to its junction with the Oka at Nijni Novgorod. It then continues eastward until it is joined by the Kama, which is about 1000 miles in length. The Volga now turns to the south and approaches within 32 miles of the Don. It then bends sharply to the south-east and enters the Caspian, below Astrakhan, by a delta having about 70 channels. The total length of the Volga is about 2000 miles, and the area of its basin is about 600,000 square miles.

The **Dneiper** rises not far from the sources of the Volga and Dwina, and flowing to the south is joined by the Beresina. It next receives the Pripet, which drains an extensive marsh. At Kiev the river turns to the south-east, and flows in that direction to Ekaterinoslav, when it again bends south for a short distance. It next turns to the south-west, and enters the sea below Kherson, after a course of 1000 miles. The area of its basin is about 200,000 square miles.

LAKES.—The lakes of Russia are very numerous, and some are of considerable size. The chief are Ladoga, Onega, and Ilmen, in the basin of the Neva; *Pskov* and *Piepus* drained by the Narva, and *Saima* and *Enara* in Finland. The lakes of Finland are exceedingly numerous.

Lake Ladoga is the largest sheet of fresh water in Europe, and covers an area of 6200 square miles. Its shores are low, its depth very unequal, and it is full of shallows and quicksands; it is also subject to frequent storms. It is navigated, however, by an immense number of boats which are chiefly laden with merchandise for St. Petersburg. About 60 streams flow into it, the chief of which is the Svir, which connects it with Lake Onega. **Onega** is the second in size among European lakes, and has an area of 4000 square miles. Its shores are rocky and deeply indented, and it contains numerous islands. Lake **Ilmen** lies to the south of Ladoga, and is connected with it by the river Volkov. Lake Ladoga is drained by the Neva, which flows into the Gulf of Finland below St. Petersburg.

Climate and Productions.—As Russia extends from the forty-third parallel almost to the seventieth, the climate is very various, but upon the whole it is colder and more extreme than in corresponding latitudes in the west of Europe. Corn crops cannot be depended upon beyond the sixty-second parallel, nor fruit trees ten degrees further south. In southern Russia, however, almonds, quinces, and pomegranates are grown, and the mulberry and vine have been cultivated. At the same time, the Volga is often frozen so hard at Astrakhan that a loaded waggon may cross it; and the Sea of Azof is usually frozen from November to the beginning of April. Spring is generally of brief duration; summer, especially in the southern provinces, very hot; and autumn damp and unpleasant. In winter the air is pure and bracing, and sledge travelling over the snow is very agreeable.

The forests consist chiefly of pine and fir; next in abundance is the birch, which supplies the peasantry with fire-wood, while from its bark they manufacture cordage, nets, and sails. Oak, lime, maple, and ash are also abundant. In many parts berry-bearing shrubs form the undergrowth of the forests, and the bilberry and cranberry are extensively used as food by the peasantry. Wild honey and bees-wax are also obtained in abundance from the forests.

Nearly all the wild animals of Europe are found in Russia. The polar bear is met with on the shores of the Arctic Ocean as well as the fox, beaver, otter, and other fur-bearing animals. The brown bear, wild boar, elk, and wild ox, inhabit the great forests, and the wolf is common throughout Russia, and in winter is very destructive to sheep and cattle. The rivers and lakes swarm with fish.

People.—The population of European Russia, in 1870, exceeded 73,000,000, more than five-sixths of whom belonged to the *Slavonic* race. On the borders of the Arctic Ocean, the Finns, Laplanders, and Samoiedes, numbering in all about three millions, belong to the *Mongolian* family of nations; and the Kalmucks and Tartars of the south-east also belong to the Asiatic races. In the Baltic provinces Jews are numerous.

The government is a despotic monarchy, all power being vested in the Emperor or Czar. The established form of religion is the Greek Church, but in the Polish provinces the majority of the inhabitants are Roman Catholics, while in Lapland, Finland, and some of the Baltic provinces, the prevailing form of faith is Lutheran. Many of the Samoiedes are still idolaters; the Tartars are Mohammedans, and the Kalmucks, Buddhists.

Until a recent date, the vast majority of the people were in a state of slavery, but the emancipation of the serfs was decreed by the present emperor in 1861. The nobles are generally educated and refined; many are acquainted with the French language, and numbers understand English and German as well. The middle class is comparatively small. The peasantry are ignorant and superstitious. They are generally strong and healthy, and live in wooden huts formed of trees piled upon each other. The furniture consists principally of wooden articles with a pan or two, and the family generally sleep on the ground, on benches, or on the tops of their large brick stoves. The dress of the peasant consists chiefly of a long coarse woollen coat, fastened with a belt round the waist: in winter the coat is replaced by a sheep skin, with the wool worn inwards. The trowsers are made of coarse linen, and a roll of flannel wrapped round the legs serves in place of stockings. The staple article of food throughout the empire is rye-bread. The peasant seldom tastes butcher meat, but eggs, salt fish, bacon, and mushrooms are plentiful. Sour cabbage soup and salted cucumbers are favourite articles of diet.

Considerable efforts are now being made to improve the education of the peasantry, and popular schools have been organised throughout the country. Mining, naval, and military schools have been established in many of the large towns; and there are universities at St. Petersburg, Moscow, Dorpat, Vilna, Kharkov, Kasan, and Kiev: of these, Dorpat, about midway between Riga and St. Petersburg, is the most celebrated. Russia is one of the great military powers of Europe, and it has also a considerable fleet stationed in the Baltic and Black Seas.

INDUSTRY.—The wealth of Russia mainly consists in its forests, mines, and fisheries. Below Astrakhan fish is said to be more abundant than in any other river in the world, and many thousand small fishing vessels are constantly employed. The fish most commonly taken are sturgeon, carp, pike, and salmon. *Caviar* is made from the roe of one kind of sturgeon, and *isinglass* from the entrails of another. A species of seal peculiar to the Caspian is annually captured by thousands for the sake of the skin and blubber. The *sterlet*, a small kind of sturgeon, is peculiar to the rivers of Russia and Siberia, and is much prized for its delicate flavour.

The extent of land under cultivation bears but a small proportion to the entire area, but is still considerable, and the abundant crops of grain leave a large surplus for exportation. Rye and oats are the grains most commonly cultivated, but *wheat* of the best quality is grown in the south-west; and in some places, millet and rice. *Hemp* and *flax* are largely cultivated, and thrive as far north as Archangel: the potato also flourishes in the same area. The vine is grown in the fertile valleys of the Crimea, and there are large plantations of the mulberry in the neighbourhood of the Caucasus Mountains. Cattle and sheep are numerous in nearly every part of Russia, and hides and wool are important articles of export.

The manufactures are not very important, though they are encouraged and protected in every way possible. Russian *leather*, however, is the finest in the world: its peculiar colour and smell are due to an oil prepared from birch. The manufacture of *shagreen*, a peculiar kind of leather, is confined to Astrakhan. Russian workmen display great skill in metal works, and especially in *damascening*, or inlaying one metal with another. Beautiful specimens of swords and daggers, inlaid with gold or platinum, are produced at Zlata-oust, a large village in the Ural Mountains. Here also the founding of cannon and the making of fire-arms are carried on to a great extent. There is also an imperial foundry at Petrozavodsk, near the western shore of Lake Onega. The iron works of Toula, in the basin of the Oka, are not so important as formerly. Besides these articles, Russia also manufactures soap, tar, and coarse fabrics of cotton, woollen, and silk.

The commerce of Russia is very considerable, and is carried on chiefly with Great Britain: next in importance come Turkey, the Netherlands, Germany, Italy, and the United States. The exports are chiefly grain, timber, hides and skins, both raw and dressed, flax, hemp, tallow, wool, linseed, and hemp seed. The imports are colonial produce, manufactured goods, raw cotton and cotton twist, wines, and fruits. The intercourse between Russia and China is carried on through Siberia, and sea-borne tea is strictly prohibited, though it is only half the price of that brought overland. The chief ports are St. Petersburg, Riga, and Revel on the Baltic; Odessa, on the Black Sea; Astrakhan, on the Caspian; and Archangel, on the White Sea.

The means of internal communication are imperfect, but rapidly improving. The rivers afford extensive means of water communication, and artificial channels connect the various river systems. Good roads have been constructed between some of the principal towns, and about 7000 miles of railway have been opened. In winter the sledge is the mode of conveyance both for goods and passengers. A large portion of the inland trade is carried on by means of fairs held annually in many of the principal towns. The largest of these is held at Nijni-Novgorod.

DIVISIONS AND TOWNS.—Exclusive of Finland and Poland, which still retain their ancient designations, the whole of Russia is divided into 50 governments, or provinces which are generally named after the chief town in each. Many of these provinces are as large as other European countries, but any attempt to remember the names of all these would be a fruitless task. The chief towns may therefore be grouped under mere general divisions:—

DIVISIONS.	TOWNS.
The Baltic Provinces, ...	St. Petersburg, Riga, Helsingfors.
Great Russia, ...	Moscow, Toula, Nijni-Novgorod, Archangel.
Little Russia, ...	Kiev, Kharkov, Poltava.
West Russia, ...	Warsaw, Vilna, Mohilev.
Southern Russia, ...	Odessa, Kherson, Taganrog.
East Russia, ...	Astrakhan, Saratov, Orenburg, Kasan, Perm.

ST. PETERSBURG.

St. Petersburg, so named after its founder, **Peter the Great**, is situated on the banks of the Neva, and defended by the impregnable fortress of *Cronstadt*. Below the city there are several islands in the river, covered with the gardens and mansions of the wealthy, and taken as a whole St. Petersburg is one of the finest cities in Europe. It has communication with Warsaw, Moscow, and Nijni-Novgorod by rail, and carries on nearly half the foreign trade of the country. The population is 670,000. **Riga**, at the mouth of the Dwina, is the third port in Russia, and exports timber, corn, and hemp. The population exceeds 100,000. **Helsingfors**, the capital of Finland, is a flourishing commercial town, and the seat of a university.

Moscow, the ancient capital of Russia, stands upon the Moskva, a feeder of the Oka. Within the circuit of its walls are large open spaces planted with trees, but the citadel, called the *Kremlin*, enclosed by a wall two miles in circuit, is crowded with palaces, churches, monasteries, and museums. Manufactures are not carried on to any great extent within the city, but the surrounding villages and hamlets produce a large quantity of textile fabrics, chiefly of wool, cotton, and silk. Moscow is the great entrepôt for the commerce of Central Russia; and in winter the traffic by sledges is enormous. The population exceeds 600,000. About 70 miles to the west is the village of *Borodino*, which gave its name to the sanguinary battle fought between Napoleon and Kutousof in 1812. **Toula**, on another feeder of the Oka, has been called the "Sheffield and Birmingham of Russia," but its coal and iron works are of less importance than formerly. It has a population of nearly 60,000.

Nijni (*Lower*) **Novgorod**, so named to distinguish it from another city of the same name on the shores of Lake Ilmen, is built upon a steep promontory at the junction of the Oka and Volga. Its annual fair, for which it is celebrated, is perhaps the largest in the world. Tea is brought from China, furs from Siberia, precious metals from the Ural Mountains, and salt from Perm. From Astrakhan it receives the silks and shawls of Central Asia, and from St. Petersburg the manufactures of Western Europe and the produce of America. The ordinary population is about 40,000, but during the months of July and August, while the fair is being held, its population is increased to about 300,000. The other *Novgorod* was, three centuries ago, one of the largest cities in Europe, but is of little present importance. **Archangel**, at the mouth of the northern Dwina, is a considerable commercial town, and carries on shipbuilding and the manufacture of matting and cordage. Its harbour, however, is closed by the ice for nine months in the year. Before the foundation of St. Petersburg, it was the only port in Russia accessible to foreigners. Its population is about 25,000.

Kiev, on the right bank of the Dnieper, is a very ancient city, and was for a considerable period the capital of the empire. It was the earliest seat of the Christian religion in Russia, and is regarded as a sacred city. It possesses a university, and is the seat of a large annual fair. The streets, however, are narrow and crooked, and the houses for the most part of wood. The population is 70,000. **Poltava**, to the south-east of Kiev, on a feeder of the Dnieper, is memorable for the defeat of Charles XII. by Peter the Great in 1709. **Kharkov**, in the basin of the Donnetz, stands in the midst of an important coal-field. It possesses also a university and four annual fairs. The population is about 60,000.

Warsaw stands on the left bank of the Vistula, and is connected by a bridge of boats with *Praga* its suburb. It is the great commercial entrepôt of Poland, and an important station for the Russian army. In 1794 the Poles expelled the Russian garrison which had previously occupied it, and for a time held the city against the enemy; but Kosciusko, the leader, after displaying great valour, was defeated and taken prisoner, and Praga being captured, the city surrendered. The present population amounts to

250,000. **Vilna** is an important town on a tributary of the Niemen. It possesses a university, and has a population of 80,000. The Jews are very numerous among its inhabitants. **Mohilev**, on the Dnieper, has a better appearance than most Russian towns, as many of its houses are built of stone. It is a chief station for the Russian army. The population is about 50,000.

Odessa, on the coast of the Black Sea, was founded as recently as 1792 by the Empress Catharine. It is a handsome and well-built town, and the chief seat of Russian trade in the Black Sea. It is the principal outlet for the corn district of south-western Russia: it exports also tallow and wool. The population is 120,000. **Kherson**, on the Dnieper, was founded in 1778. It possesses some trade, but its commercial importance has declined before that of Odessa. Here died Howard the philanthropist in 1790. The population is 40,000. **Taganrog**, about 10 miles from the mouth of the Don, was founded by Peter the Great. It is the chief outlet for the provinces drained by the Don, and exports considerable quantities of wheat. The population is 24,000.

Astrakhan stands on the Volga about 30 miles from the shores of the Caspian. It possesses valuable fisheries, and carries on a considerable trade with Persia and the countries to the east of the Caspian. It exports furs, iron, and manufactured goods; and imports silk, cotton, shawls, carpets, and drugs. The population is about 45,000. **Saratov**, on the Volga, has some manufactures of cotton, silk, and leather, and an extensive trade. The population exceeds 90,000. The small town of *Sarepta*, where the Volga bends to the south-east, is inhabited by a colony of German Moravians. **Orenburg**, on the Ural, by means of a caravansary on the left bank of the river, carries on a considerable trade with the Kirghiz and other tribes of Asia. The population is about 30,000. The government of Orenburg extends across the Urals into Asia. **Kasan**, picturesquely situated on the left bank of the Volga, has considerable trade in the furs, metals, and tea brought from Siberia. It is also noted for the manufactures of a kind of soap much used in Russia. The population is about 80,000. **Perm**, on the Kama, has considerable trade in salt and metals. The government of Perm, like that of Orenburg, extends beyond the Urals.

BRITISH POSSESSIONS IN EUROPE.

THE British possessions in Europe, exclusive of the British Islands, are the Channel Islands, Heligoland, Gibraltar, and Malta.

THE CHANNEL ISLANDS.

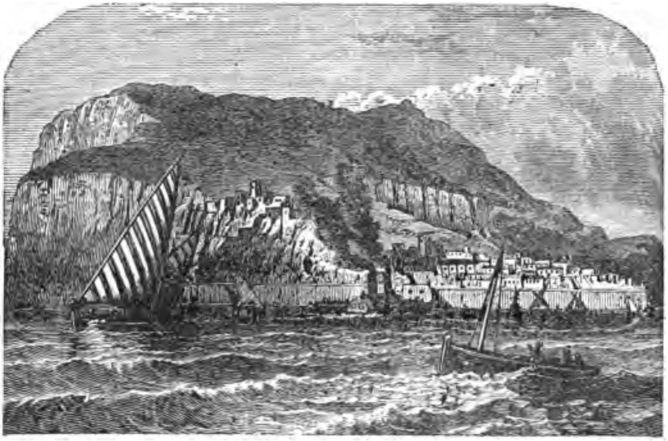
The Channel Islands came into our possession on the accession of William the Conqueror, and are all that now remain of our Norman possessions. The group lies on the coast of France, in the neighbourhood of Cape de la Hogue, and includes Jersey, Guernsey, Alderney, Sark, and some smaller islets. The total area is about 112 square miles; and the population in 1871 was 90,563. The language is a corrupt French, but English is generally understood. The islands possess a local government, and are independent of the jurisdiction of all British courts, except that of the Admiralty. Jersey and Guernsey have each a Lieut.-Governor, and there is a bailiff, or judge, in each island who is appointed by the Crown for life.

Jersey, the largest island, has an area of about 45 square miles, with a population of nearly 57,000. The surface is varied, the climate warm and mild, and the soil productive. Wheat and other grains, with potatoes, are the chief crops; and orchards are numerous. The chief exports are cattle, cider, potatoes, and oysters. The chief town is *St. Helier*, the capital of the whole group. **Guernsey** lies 15 miles north-west of Jersey, and has an area of 24 square miles, with a population of about 30,000. The climate is damp and inconstant, but healthy; and the soil only moderately fertile. Cattle breeding is carried on to a considerable extent. The only important town is *Peter-le-Port*. **Alderney**, 15 miles to the north-east of Guernsey, has an area of only four square miles. It is celebrated for a small breed of cows which afford excellent milk and butter. The island is surrounded by numerous reefs, and the *Race of Alderney*, between the island and the mainland, is dangerous in stormy weather. On the north-west are the **Caskets**, a group of rocky islets, near which Prince William, son of Henry I., was drowned (1120). **Sark**, or Sercq, is a small rocky island to the east of Guernsey. It consists of two parts, which are united by a ridge of rock 200 ft. high and only five ft. broad. The inhabitants knit stockings, gloves, and guernsey jackets, which are sent to Bristol and other ports on the west coast of England. Alderney and Sark are both dependencies of Guernsey.

HELIGOLAND.

Heligoland is a small island about two and a half miles in circumference, situated about 30 miles from the mouth of the Elbe. It consists of a flat-topped rock, about 200 ft. in height, covered with soil of considerable fertility, and a low sandy island separated from the main island by a wide channel. The people, who number about 2000, are chiefly engaged in the haddock and lobster fisheries. Many of the men are excellent pilots; and the women are employed in raising scanty crops of oats and barley, or in tending the few sheep that graze on the downs. Steamboats run between Hamburg and Heligoland in the summer months, and it has become a favourite resort for sea-bathing. There are between four and five thousand visitors in the season.

Heligoland (*holy land*) was so named because in Saxon times it was the seat of worship of the Saxon goddess Phoseta. It was in the possession of the Danes until 1807, when it was captured by England. During the blockade of European ports established by Napoleon, it was a convenient depot for English goods, whence they were smuggled on to the Continent. Since the peace of 1815 it has not been of much importance.



GIBRALTAR.

Gibraltar rock is a mass of grey limestone three miles in length from north to south, and about three quarters of a mile broad. It is connected to the mainland by a low sandy isthmus, and terminates on the south in *Europa Point.* The rock rises, in its highest elevation, to a height of 1439 ft., and is inaccessible on the north and east, and nearly so on the south. On the west, where it slopes down to Gibraltar Bay, it is defended by formidable batteries. The town of *Gibraltar* stands on the north-west side of the rock, and fronts the bay. On the opposite side of the bay, about five miles distant, stands the Spanish town of Algesiras. The bay is spacious, but there is no good anchorage, and it is exposed to the south-west winds. The total population exceeds 25,000, of whom 6500 are soldiers.

Gibraltar was captured from Spain by Sir George Rooke in 1704. Since that time it has been repeatedly besieged, and on the last occasion the siege, conducted by the combined French and Spanish fleets, lasted three years and seven months (1779-1783). The besiegers, however, were defeated with great loss. The fortress is of great political importance, as it commands the entrance of the Mediterranean. The town also is the centre of considerable trade.

MALTA.

Malta lies fifty-six miles south of Sicily, and about 200 miles from the coast of Africa. It is an irregular oval in shape with deeply indented shores, except on the south, and has an area of 95 square miles. The surface is very irregular, and in the south-west reaches an elevation of 1200 ft., whence it slopes to the north-east. The island is naturally barren, but is highly cultivated, the chief products being cotton, wheat, barley, and beans. There are no lakes or streams, but springs are numerous. The climate is hot in summer, but in winter it is delightful. Besides the cultivation of cotton and corn, fruits—especially figs and oranges—are grown to a considerable extent; and a large quantity of live-stock are raised on the island. The total population is about 146,000, exclusive of the British troops and their families who number nearly 7000. The native Maltese are a dark, active race, and make excellent sailors. They are of Italian extraction, and strongly attached to the Roman Catholic religion. The chief towns are Valetta and Citta Vecchia.

On the north coast of the island is a small harbour, called *St. Paul's Bay*, which is supposed to have been the scene of the Apostle's shipwreck (Acts xxvii.). Malta was for a long time in the possession of the Knights of St. John, but was delivered up by the Grand Master of the Order into the hands of Napoleon. It was captured by Nelson in 1800, and definitely annexed to England at the treaty of Paris in 1814. Malta is a very important station both in time of peace and war. It is convenient as a centre of trade, whence British produce can be spread over the Mediterranean; and it possesses an extensive arsenal and a large dockyard. *Valetta*, the capital, stands in the centre of a fine double harbour, and is strongly fortified. The depth of the water is so even that the largest vessels may anchor alongside the very shore. *Citta Vecchia*, the old capital, stands in the interior about seven miles from Valetta. Though now greatly decayed, it is a handsome town, and contains the ancient palace of the Grand Masters of St. John, a cathedral, and a college.

MALTA HARBOUR.

The island of **Gozo**, which forms a dependency of Malta, lies to the north-west, and is separated from it by a channel four miles wide, in which lies the small island of **Comino**. Gozo has an area of about twelve square miles. The chief town is *Rabato*, situated in the middle of the island. The total population is about 16,000.

The government of Malta is carried on by a Governor, who is assisted by a Council of eighteen members; ten of whom are officials and eight are elected.

CYPRUS.

Cyprus, an island in the eastern part of the Mediterranean, belongs to the Ottoman Empire, but has been placed under the administration of Great Britain. It has an area of 4200 square miles, but the population is only about 150,000. A range called Mount Olympus runs through the centre of the island, and in one summit attains an elevation of nearly 7000 feet. The soil is said to be fertile, but cultivation has been neglected. The chief exports are wines and salt. Lefkosia, or Nicosia, the capital, stands on a plain in the interior, and has a population of 16,000. Larnaca, on the south, and Famagosta, on the east, are the chief ports, but neither of them has a good harbour.

ASIA.

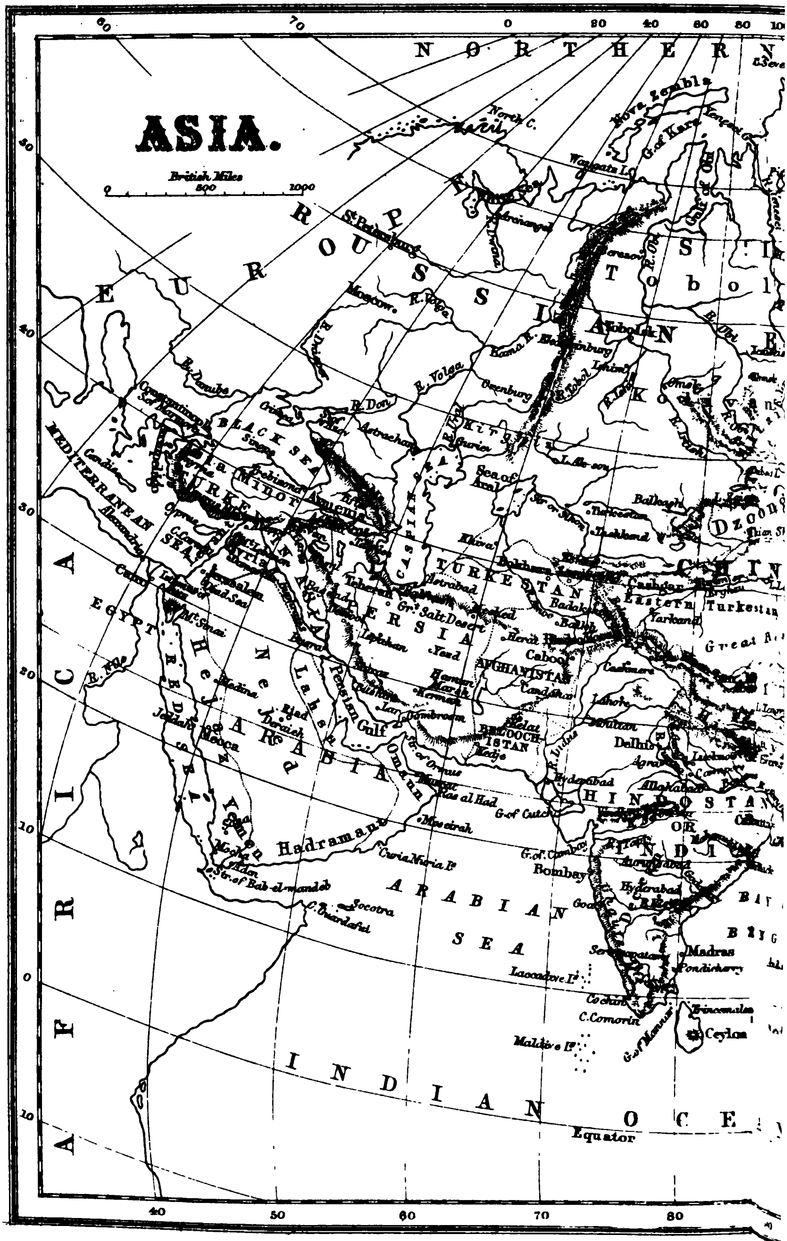
GENERAL DESCRIPTION.

Boundaries and Extent.—Asia is bounded on the north by the Arctic Ocean; on the east, by the Pacific; on the south, by the Indian Ocean; and on the west by the Levant and Archipelago (parts of the Mediterranean Sea), the Black Sea, the Caucasus Mountains, the Caspian Sea, the Ural River, and the Ural Mountains. It extends from the Equator to far within the Arctic Circle, and from 30° to 180° east longitude. Its length from the Dardanelles to the peninsula of Corea, along the 40th parallel, is nearly 6000 miles; its breadth, from Cape Severo to Cape Romania, almost coinciding with the meridian of 100° east, is 5400 miles; and its area, including its numerous islands, is about 17,500,000 square miles.

Cape Severo, the most northern point in Asia, is in lat. 78° 20′; **Cape Romania**, the most southerly point, in lat. 1° 20′; **East Cape**, in Behring Strait, is the most easterly point. It is 190° 10′ *east*, or 169° 50′ *west* of Greenwich. **Cape Baba**, in Asia Minor, the most westerly point on the Continent, is 26° 5′ east longitude. Asia is connected to Africa by the Isthmus of Suez, which is 73 miles in width, and at the **Strait of Bab-el-Mandeb** it is only 16 miles from that continent. **Behring Strait**, which separates it from America, is, in its narrowest part, 36 miles wide. Asia is by far the largest of the continents, having an area which exceeds that of North and South America taken together.

Countries.—The following is a list of the principal countries of Asia, with the area and population of each, in round numbers, and the capital or chief town of each state :—

Countries.	Area in Sq. Miles.	Population.	Capital.
Asiatic Russia, - -	6,250,000	12,000,000	Irkutsk.
Japan, - - - - -	155,000	33,000,000	Tokei (Yeddo).
Chinese Empire, - -	4,000,000	420,000,000	Pekin.
Eastern Turkestan, -	500,000	4,000,000	Cashgar.
Western Turkestan, -	100,000	4,000,000	Bokhara.
Afghanistan, - - -	278,000	4,000,000	Cabool.
Beloochistan, - - -	106,000	1,000,000	Kelat.
Persia, - - - - -	636,000	6,000,000	Teheran.
Asiatic Turkey, - -	764,000	13,000,000	Smyrna.
Arabia, - - - - -	1,200,000	5,000,000	Muscat.
India, - - - - -	1,400,000	240,000,000	Calcutta.
Indo-China, - - -	1,000,000	22,000,000	Bankok.
Eastern Archipelago, -	800,000	30,000,000	Batavia.



ASIA.
British Miles
0
500
1000
NORTHERN
Nova Zembla
G. of Kara
North C.
St Petersburg
Archangel
Moscow
R. Volga
R. Dnieper
R. Danube
R. Don
Astrachan
Orenburg
Ekaterinburg
Tobolsk
R. Tobol
R. Obi
EUROPE
RUSSIA
Tobol
Constantinople
BLACK SEA
Sinope
Trebizond
Candia
MEDITERRANEAN SEA
Alexandria
Cyprus
Cairo
EGYPT
Mt. Sinai
Red Sea
Asia Minor
TURKEY
Armenia
Syria
Bagdad
Bussora
Teheran
Astrabad
PERSIA
Ispahan
Yezd
Gt. Salt Desert
Herat
Cabool
AFGHANISTAN
Candahar
Kerman
Gombroon
Persian Gulf
Muscat
Ras al Had
Oman
BELOOCHISTAN
Kelat
Sea of Aral
Khiva
Bokhara
TURKESTAN
Balkh
Badakshan
Cashgar
Yarkand
Eastern Turkestan
Cashmere
Lahore
Multan
Delhi
Agra
Allahabad
Lucknow
Hydrabad
HINDOSTAN OR INDIA
G. of Cutch
G. of Cambay
Bombay
Goa
Madras
Pondicherry
Cochin
C. Comorin
Ceylon
Laccadive Is.
Maldive Is.
Medina
Jeddah
Mecca
Nejd
ARABIA
Yemen
Mocha
Aden
Str. of Bab-el-mandeb
Hadramaut
Socotra
C. Guardafui
Curia Muria Is.
Maseirah
ARABIAN SEA
AFRICA
R. Nile
INDIAN OCEAN
Equator
Ceylon
Madras

OCEAN
Behring Strait
BEHRING SEA
KAMCHATKA OR
Aleutian Islands
SEA OF OKOTSK
Kurile Islands
Arctic Circle
Yakutsk
Irkutsk
Baikal
Yablonnoi Mts
Sagalien I.
Mongolia
Shamo
Manchooria
Great Wall
Pekin
Tien-tsin
G. of Pe-che-lee
YELLOW SEA
SEA OF JAPAN
Nippon
Sikokf
Kiusin
Nangasaki
Shanghai
Nankin
Peling Mts
CHINA
Nan ling Mts
Canton
Hong Kong
Formosa
Loo-choo Is.
Tropic of Cancer
Volcano Is.
Bonin Is.
Tonquin
Hainan
G. of Tonquin
Luzon
PHILIPPINE ISLANDS
Manilla
Mindanao
SIAM
Cambodia
Saigon
Gulf of Siam
Malay
Singapore
BORNEO
Celebes Sea
CELEBES
SUMATRA
Java
EAST INDIA ISLANDS
Banda Sea
Arafura Sea
NEW GUINEA
AUSTRALIA
Timor
PACIFIC OCEAN
Caroline Is.
BURMAH
Rangoon
Tibet
Lassa
Andaman Is.
Nicobar Is.

'London & Glasgow.

COAST-LINE.—The coast-line of Asia is about 35,000 miles in length. The north coast runs in a general direction from west to east and is not much indented, the chief opening being the Gulf of Obi. To the east of Cape Severo are the *Liakov* Islands, famous for their fossil ivory.

The whole region of Siberia is remarkable for the remains of the extinct mammoth and rhinoceros; and almost everywhere, on the banks of the rivers, fossil ivory may be collected. It is said that the bones of the mammoth still left in Siberia must greatly exceed in number those of all the elephants now in existence.

The east coast of Asia is washed by five land-locked seas: the sea of Kamtschatka, enclosed by the Aleutian Islands; the sea of Okhotsk, by the peninsula of Kamtschatka and the Kurile Islands; the sea of Japan; the Yellow Sea, partially enclosed by the Corea; and the China Sea, enclosed by the Philippine Islands and Borneo.

The **Aleutian** Islands and the peninsula of Kamtschatka are both highly volcanic. The peninsula terminates in **Cape Lopatka.** The Russians have recently ceded the Kurile Islands to Japan in exchange for the southern part of **Saghalien.** The Yellow Sea, so called on account of its muddy waters, contains the Gulf of Pe-chi-li. The Chinese Sea contains the gulfs of Tonquin and Siam. At the entrance of the latter is **Cambodia Point.**

The south-coast of Asia, like the south coast of Europe, contains three peninsulas. The peninsula of Malaya is connected with Siam by the *Isthmus of Krah,* and it terminates in *Cape Romania.* Rounding the Cape we pass Singapore and enter the Strait of Malacca, between the peninsula and the island of Sumatra. The eastern side of the Bay of Bengal is rocky, but well watered and clothed with vegetation; the western side, if we omit the delta of the Ganges, consists of low parched plains with shores destitute of good harbours. Rounding *Cape Comorin,* which terminates the peninsula of Hindostan, we enter the Arabian Sea, whose shores present the same contrast as those of the Bay of Bengal; the Malabar coast of Hindostan is well watered, while the shores of Beloochistan and Arabia are parched and dry. The peninsula of Arabia terminates on the south-east in *Ras-al-Had.* Leaving this cape and passing through the *Strait of Ormus* we enter the Persian Gulf.

The **Persian Gulf** has an area of 95,000 square miles. Owing to the number of coral reefs and small islands, navigation—especially along the Arabian coast—is difficult and hazardous. Here, however, there is a valuable pearl fishery of which the island of **Bahrein** is the centre. The fishery is carried on by divers who can remain under water nearly two minutes at a time, during which they collect the pearl oysters into nets attached to their waists. Bahrein with some adjacent islands belongs to the Imaum of Muscat.

From Ras-al-had the coast runs to the south-west, and we pass the Curia Muria Islands and Aden, both of which belong to Britain. The Strait of *Bab-el-Mandeb*, in which stands the island of Perim, leads into the Red Sea. The broader channel to the eastward of the strait is called the *Gulf of Aden.*

The **Red Sea** fills up a long narrow valley between the shores of Arabia and Africa. It is about 1400 miles in length, and has an area of 180,000 square miles. No other body of water of the same extent has such numerous and extensive coral reefs. But they exist generally in long strips parallel to the shore, and leave a deep channel in the middle. Some attribute the name of the sea to the abundance of coral, but the coral are mostly white. At the northern extremity the sea is divided into the **Gulfs** of **Akaba** and **Suez** by a peninsula upon which stands Mount Sinai. The shores of the Red Sea are rocky and there are good harbours on both sides, the chief one, on the coast of Arabia, being the port of Jeddah.

Crossing the desert we reach the shores of the Mediterranean. The coast of Syria, from Gaza to Beyrout, is rather low, and backed by a level plain. The coast then assumes a bolder character, and the south shores of Asia Minor present a bold irregular outline of steep and lofty rocks. The island of *Cyprus* has an area of about 4000 square miles, with a population of 150,000. The west coast of Asia Minor is very rugged, and terminates in *Cape Baba.* The northern shore, washed by the Black Sea, is also bold, steep, and rugged, with deep water close to the land.

SURFACE.—Asia has been called the continent of plateaus. In the middle of the continent we have the *Great Central Plateau,* which is bounded on the north by the Altai Mountains, on the south by the Himalayas, on the east by the Khingan, In-shan, and Yung-ling Mountains, and on the west, where it narrows, by the plateau of Pamir and the hills running northward to the Altai system. From this central plateau the continent slopes in all directions; on the north is the plain of Siberia; on the east, the plain of China; on the south Further India and Hindostan; on the west Turkestan. South of Turkestan is the *Plateau of Iran,* which has an elevation of about 3000 ft., and includes the countries of Afghanistan, Beloochistan, and Persia. To the north-west of Persia, and south of the Caucasus Mountains, is the *Plateau of Armenia,* from which rises Mount Ararat; and westward of Armenia is the *Plateau of Asia Minor.* Lastly, we have the *Plateau of Arabia* separated from that of Iran by the valley of the Euphrates and Tigris.

The **Altai** Mountains, in their western portion, consist of a number of round topped summits seldom more than 6000 ft. high; **Bielukha**, however, the culminating peak, reaches almost double that elevation. South of Lake Baikal the system consists of several parallel ranges; these afterwards unite and the range is continued north under the names of **Yablonnoi** and **Stannovoi** mountains. Two ranges, the **Thian-Shan** and the **Kuen-lun**, cross the Central Plateau; the latter contains summits 20,000 ft. in height. The western extremities of the Thian Shan and Kuen-lun are connected by the *Plateau of Pamir*, which extends from north to south for a distance of about 200 miles, and has an elevation of 15,000 ft. Between the Kuen-lun and Himalayas is the *Plateau of Thibet*, which rivals Pamir in elevation. The **Himalayas** are the highest range in the world, and **Mount Everest**, the culminating summit, reaches an elevation of 29,000 ft. They extend along the north of Hindostan for a distance of nearly 2000 miles. On the east the chain is terminated by a mountain knot, from which radiate various ranges which run through Southern China and Further India. At the other extremity of the chain the Himalayas are connected with the **Hindoo Koosh** Mountains, which form the south-eastern boundary of Turkestan, and rival the Himalayas in height.

MINERALS.—Nearly every product of the mineral kingdom is found in this continent, but Siberia, China, India, and the islands of the Archipelago are especially rich. The Ural Mountains produce *gold*, *platinum*, and *iron;* and from the Altai system are obtained gold, *silver*, *lead*, and *copper;* in China are found gold, silver, lead, *diamonds*, and other precious stones, as well as *coal* in abundance. The Indian Archipelago is especially rich in *tin*, *quicksilver*, gold, and precious stones. India has stores of iron and coal. The *ruby* is abundant in Ceylon and Burmah, the *topaz* is found in Siberia, the *torquoise* is peculiar to Persia, and the *lapis lazuli* is found in Badakshan, on the western side of the plateau of Pamir.

RIVERS.—The rivers of Asia are numerous and important. They generally rise on the edges of the various plateaus, and drain the slopes by which the plateaus are surrounded. On the north of the Central Plateau are the Obi, Yenesei, and Lena, which flow into the Arctic Ocean; on the east, the Amoor, Hoangho, and Yang-tse-kiang, which flow into the Pacific; on the south, the Mekon, Meinam, Saluen, and Irrawady, in Further India; and the Brahmapootra, Ganges, and Indus, in Hindostan. The Tigris and Euphrates drain the valley between the plateaus of Iran and Arabia, and after uniting flow into the Persian Gulf.

Several Asiatic rivers have an inland drainage: thus the **Tarim**, which drains Eastern Turkestan, flows into Lake Lop; the **Amoo** or **Oxus**, and the **Syr-Daria** flow into the Sea of Aral; the **Jordan** empties itself into the Dead Sea; and the **Helmund**, in Afghanistan, flows into Lake Zurrah.

LAKES.—Lakes are numerous in Asia, but they seldom occur in groups as in Europe, and resemble those of Russia rather than the lakes of Switzerland and Italy. Some of them are very large, such as the Caspian, Sea of Aral, and Lake Baikal; and very many have no outlets, and their waters are therefore more or less salt. *Lake Victoria*, the source of the Oxus, lies on the Plateau of Pamir, at an elevation of 15,600 ft., and is said to be the most elevated lake on the earth's surface. The *Dead Sea*, which is 1300 ft. below the level of the Mediterranean, is the most depressed sheet of water on the earth. Its waters are so extremely salt as to be devoid of all animal life. Still more salt is *Lake Urumiyah*, in the north-west of Persia. The Caspian Sea is the largest lake in the world.

The **Caspian** and the **Sea of Aral** occupy a great depression on the surface of the globe. The surface of the Caspian is about 80 ft. lower than the level of the Black Sea, and the Sea of Aral is only about 40 ft. above sea-level. Hence it is probable that at no distant period the Sea of Aral, the Caspian, and the Black Sea, with the intervening land, were covered with water. Owing probably to excessive evaporation, caused by the extreme dryness of the air, this sea has dried up in some parts, and thus perhaps we may account for the numerous small salt lakes that abound in this region. The Caspian has an area of 130,000 square miles, and its water is salt, though less so than the Ocean. The depth of its central portion is nearly 3000 ft., but it is shallow round the shores. The Sea of Aral has an area of about 26,000 square miles; its waters are shallow and slightly salt.

CLIMATE.—As Asia extends from the Equator to a point twelve degrees within the Arctic Circle, it necessarily experiences every variety of climate. As, however, the greatest breadth of the continent is between the parallels of 30° and 40°, it follows that the greater portion of the continent lies in the temperate zone. The temperate regions of Asia, however, have a climate colder, drier, and more subject to extremes than those of Europe. This is partly owing to the greater average elevation, partly to the prevalence of north-easterly winds, and partly to the fact that Asia is less within the influence of the ocean than Europe is. It is found also in Asia, as in Europe, that in advancing along any parallel the average temperature gradually becomes less, and the climate more extreme. This must be owing almost entirely to the north-east winds.

The country lying to the north of the Altai Mountains and its extensions, and stretching westward to the Caspian, has a cold dry winter, nine months in length, with a brief hot summer; and the district, from Yakutsk to the mouth of the Lena, is said to be the coldest inhabited region on the globe. The middle of Asia, including the central table-land, is, with the exception of some deep valleys, cold and dry, and subject to piercing north winds. In this region there is a belt of land extending from Central Asia to the shores of the Red Sea, where a drop of rain seldom falls. South of the Central Plateau the climate is hot: in the south-east, hot and humid; in the south-west, hot and dry. The countries in the extreme west of Asia, and bordering on the Mediterranean, have a climate resembling that of Southern Europe.

VEGETATION.—The vegetable productions of Asia are as various as its different climates. North of the 60th parallel are desert tracts called *tundra*, which in summer consist of swamps and mosses, but for the greater part of the year are covered with ice. In the southern part of Siberia are extensive forests, and the Altai Mountains are well clothed with timber. The Central Plateau is bare of wood, but produces abundant grass. South of the Himalayas vegetation is very luxuriant, and especially in the Eastern Archipelago. In the south-east of Asia, rice is the chief food plant; in the south-west, the date.

The eastern part of Siberia is covered with forests of pine, birch, and larch; in the south-west are extensive steppes, where a thin soil produces luxuriant grass. The plains of Central Asia have a thin covering of grass intermixed with prickly shrubs, among which the Tartarian furze is common. But in the poorest districts the camel and wild ass can subsist. Hindostan and the countries to the east are famous for their palms, fig-trees, bananas, and ornamental woods. The Archipelago is the special region of spices, such as nutmegs, cloves, and cinnamon; and also of deadly vegetable poisons, such as the upas-tree of Java. South-western Asia, including Asia Minor and the countries comprised in the Plateau of Iran, is the special region of perfumes and medicinal gums. Here myrrh, frankincense, gum-arabic, and the "balm of Gilead," are produced; and in Persia the gum-ammoniac and assafœtida plants are found. The vine is cultivated all over Southern Asia; the olive chiefly in the south-west. Tea is indigenous to China and Assam; coffee, to Arabia.

ANIMALS.—Asia is richer in mammalia than any other continent, and with the exception of the marsupials all the great orders are found. It is, however, especially rich in *carnivorous* animals. The domestic animals of Europe—the horse, ass, ox, and sheep, are all of Asiatic origin; and all our poultry, except the turkey, came originally from this continent. Reptiles are less numerous than in some other parts of the globe, but they include the python, the crocodile, and the deadly cobra or hooded snake.

In Siberia are found the black and white bears, the elk, reindeer, and various fur-bearing animals. In Central Asia we meet with the camel, wild ass, yak, and Thibet goat. South of the great mountain chain the elephant, rhinoceros, lion, tiger, hyena, wolf, and jackal are found. The elephant and rhinoceros are not found to the west of India or to the north of the Himalayas; the lion belongs chiefly to the countries of the south-west. The tiger, however, is met with as far north as the sources of the Obi, and the wolf roams over the whole continent. The order of Edentata, confined for the most part to South America, is represented in Asia by the scaly ant-eater, which is found in India, China, and the Eastern Archipelago. Monkeys abound in the forests of the south-east, and the orang-outang is a native of the islands of Borneo and Sumatra. Western Asia, like Europe, is rich in song-birds, and this is the true home of the nightingale. Eastern Asia is celebrated for birds of beautiful plumage. The peacock is a native of India, the golden pheasant comes from China, and the beautiful birds of paradise are confined to New Guinea and the neighbouring Aroo and Molucca Islands.

POPULATION AND RELIGION.—The population of Asia is estimated at 800,000,000, or considerably more than half the population of the globe. The great majority of the inhabitants belong to the Mongolian type, but the Caucasian races are found in Arabia, Persia, Afghanistan, and Hindostan, and include also the Georgians, Circassians, and other nations inhabiting the region of the Caucasus.

The **Mongolian** type, of which the Chinese may be taken as representatives, are distinguished by prominent cheek bones, a flat nose, eyes set far apart and elevated at the outer corners. The skin is of an olive hue, the hair coarse and lank, and the beard scanty. The type is distinguished by great industry, shrewdness, and imitative power. The Mongolian races are met with in Siberia, China, Japan, Mongolia, Turkestan, Asia Minor, and a large portion of Further India. The *Malay race* is generally considered a subdivision of the Mongolian type. It inhabits the Malay peninsula and the islands of the Archipelago.

The Mohammedan religion is professed in Western Asia and among some tribes of Siberia; Brahminism prevails in Hindostan, and Buddhism in China, Thibet, Further India, and Japan. Christianity is the prevailing religion in Asiatic Russia and in some parts of Asiatic Turkey.

ASIATIC RUSSIA.

ASIATIC RUSSIA consists of three parts: Caucasia, Russian Turkestan, and Siberia; we shall treat of each of these divisions separately.

CAUCASIA.

The entire region of the Caucasus forms a distinct administrative division of the Russian empire, and lies on both sides of the great mountain chain. The whole region is divided into twelve governments, three of which—Stavropol and the territories of the Kuban and Terek respectively—lie on the north side of the mountain chain. On the south side are the governments of Kutais, Tiflis, Elizabetopol, Baku, Erivan, and some smaller territories. The Caucasian division also includes the desert region between the Caspian and the Sea of Aral, and which extends southward to the Attrek river on the borders of Persia. The total area is about 173,000 square miles, and the population nearly 5,000,000.

The Asiatic portion of Caucasia, with the exception of the district to the east of the Caspian, is mountainous and well wooded, and stretches south as far as the summit of **Mount Ararat**. The district is however well watered, and the valleys are extremely fertile. The chief river is the **Kur**, which drains the greater part of Trans-Caucasia and which, after being joined by the Aras, enters the Caspian. The climate is temperate but subject to extremes of heat and cold, and the produce consists of grains and fruits chiefly. The vine and mulberry are cultivated and crops of cotton and rice are raised. The inhabitants belong to the Caucasian family of nations, and the females are celebrated for personal beauty. Many of the inhabitants belong to the Greek Church, but most of the mountain tribes are Mohammedans. The chief towns are Tiflis, Erivan, Baku, Kars, and Batoum. **Tiflis**, the chief town in Caucasia, stands upon the banks of the Kur, and was formerly a place of great trade. It is situated where the road across the Caucasus, through the *Pass of Dariel*, commences. Its present population exceeds 60,000. **Erivan**, on a branch of the upper Aras, stands on a plain to the north of Mount Ararat. It is strongly fortified, and has a population of about 14,000. **Baku**, on the shore of the Caspian Sea, is famous for its naptha springs. The steamers navigating the Caspian make use of the naptha as fuel. **Kars** was captured from Turkey in 1877. **Batoum**, on the Black Sea, was handed over to Russia by the Berlin Congress (1878).

RUSSIAN TURKESTAN.

Within the last ten years a great portion of what was formerly called Turkestan, or Independent Tartary, has been annexed by Russia, and it is very probable that before many years have passed the whole will be absorbed. At present Russian Turkestan includes the provinces of Amoo Daria, Zerafshan, Syr-Daria, and Semiretchensk. *Amoo Daria* embraces the territory on the right bank of the Amoo, or Oxus, from the Sea of Aral to the frontier of Bokhara; *Zerafshan* lies between Bokhara and Khokan, and includes the city of Samarcand. *Syr-Daria* embraces the whole basin of that river with the exception of a small territory on the left bank of its upper course, which is still left to Khokan; and *Semiretchensk* extends northward between Lake Balkash and the Thian-Shan, and includes also a portion of Dzungaria, drained by the upper course of the Ili. The whole area of Asiatic Turkestan, or Central Asia, as it is sometimes called, exceeds 1,250,000 square miles.

A great portion of this vast area is covered with deserts of sand where cultivation is only possible on the immediate banks of rivers, or in the vicinity of canals; but in the mountainous regions the soil is fertile and there is a good deal of timber. The climate is subject to great extremes, the summers being very hot. The inhabitants, who belong to various Turkoman tribes, number nearly 4,000,000. The chief towns are Tashkend, Samarcand, and Fort Viernoie. **Tashkend**, on an affluent of the Syr-Daria, is the centre of considerable trade, and has a population of nearly 80,000. **Samarcand**, once the capital of Tamerlane's dominions, stands to the south of the Zerafshan river. It was once a city of great splendour and was termed an "earthly paradise." The present population is about 20,000. **Fort Viernoie** is the chief place in the province of Semiretchensk, and guards the entrance to the upper valley of the Ili.

SIBERIA.

BOUNDARIES AND EXTENT.—Under the name of Siberia is included a large tract of country which embraces the whole north of Asia, and extends from the Ural Mountains to the Pacific, and from the Altai System to the Arctic Ocean. The length, from east to west, is about 4000 miles, its extreme breadth is about 2000 miles, and the total area exceeds 4,800,000 square miles.

The Altai system forms the southern boundary of Siberia as far as Lake Baikal, but from that point there is no natural boundary until we reach the Argun, a tributary of the Amoor. It follows that stream unto its junction with the Chilka, after which the Amoor forms the boundary as far as the confluence of the Ussuri, along the right bank of which there is a line of Cossack stations. Russia has taken possession of all the country between the Ussuri and the coast, and has extended her territory as far south as Peter the Great Bay, about the 42nd parallel.

SURFACE AND MINERALS.—The greater portion of Siberia consists of a plain which slopes gently from the Altai Mountains to the shores of the Arctic Ocean. The eastern portion is somewhat diversified and contains extensive forests, in the south-west are vast steppes which are connected on the one hand with those of Europe, and on the other with those of Turkestan. Siberia is very rich in minerals. The Ural Mountains produce gold, platinum, and iron, the town of *Ekaterinburg* being the chief centre of this mining district. From the Altai system gold, silver, lead, and copper are obtained, the chief mining centres being *Barnaul*, on the Obi; and *Nertchinsk*, on the Chilka, to the east of Lake Baikal.

RIVERS AND LAKES.—The chief rivers are the Obi, Yenesei, Lena, and Amoor. Flowing for the most part through a level country they are navigable throughout the great part of their courses, and are of great use as a means of communication between one part of Siberia and another. Since all their outlets, however, with the exception of that of the Amoor, are in the Arctic Ocean, they are not of such commercial importance as they would otherwise be. For several months of the year they are frozen, but this does not materially diminish their usefulness as sledges then take the place of boats. All the rivers flowing northward are subject to floods; for when the ice breaks up in spring the upper portions of their basins are filled with running water, while for several hundred miles near their mouths the rivers are still frozen.

The **Obi** rises in the Altai Mountains, and flowing northward past Barnaul and Tomsk, is joined by the Irtish. This important feeder rises in Mongolia, and passing through *Lake Zaisan* flows north-west to Tobolsk, receiving on its way the waters of the Ishim and Tobol. The Irtish then flows northward to its junction with the Obi, and the main stream passing Berezov empties itself into the Gulf of Obi after a course of about 2800 miles.

The **Yenesei** also rises in the Altai Mountains, and flowing northward is joined by the Angara or Upper Tunguska, which comes from *Lake Baikal*. This lake lies at an elevation of 1800 ft., and has an area of 15,000 square miles. It is surrounded by lofty mountains, and its waters, which are deep and fresh, abound with fish. It receives a large number of streams, the chief of which are the Upper Angara and the Selenga; on the latter stand the towns of Kiakhta and Selinginsk. The lake has only one outlet, and near the place where the Angara leaves it stands the town of Irkutsk. Below the confluence of the Angara the main stream passes Yeneseisk, and then flowing to the north-west it is augmented by the Middle and Lower Tunguska, and finally discharges its waters by a broad estuary after a course of 3000 miles.

The **Lena** rises on the western side of Lake Baikal and not more than twenty miles from its shores. Its general course, as far as Yakutsk, is to the north-east; and its banks are clothed with noble forests of spruce and pine. Below Yakutsk it is joined by the Aldan, and then flowing to the north-west it empties its waters by a large delta after a course of about 2400 miles.

The **Amoor** is formed by two streams, the Chilka and Argun, both of which rise in the mountains lying south-east of Lake Baikal. The main stream flows at first to the south-east, being joined on the left bank by the Zeya, and on the right by the Songari. Turning now to the north-east, it is next joined by the Ussuri, and it finally flows into the Gulf of Tartary, about twenty miles below Nicolaievsk. The total length of the Amoor is about 2600 miles, and it is navigable by small steamers for a distance of 2000 miles. The country through which it flows is of considerable fertility, and in many parts well wooded.

CLIMATE AND PRODUCTIONS.—The climate of Siberia, to the north of the Altai chain, is proverbial for its cold: in the basin of the Amoor it is much more genial in character. The mean annual temperature at Yakutsk is only 13°, but it is the excessive cold of winter that makes the average so low. The mean summer temperature is equal to that of Great Britain, while in the month of January the average temperature is 40° below zero, or 72° below the freezing point. North of the 60th parallel—as in corresponding latitudes in Europe—there are dreary tracts called the tundra, which in summer consist of swamps and mosses and in winter are covered with ice. Further south there are extensive forests, especially in the east, and the Altai Mountains are clothed with pines, elms, and poplars, almost to their summits. The steppes of the south-east resemble those of Europe, and in summer are covered with flowers, including hyacinths and mignionette. Wolves and bears are numerous in various parts of the country, and in the east fur-bearing animals, including the sable, ermine, fox, otter, beaver, badger, and squirrel, are hunted for their skins. The rivers and lakes swarm with fish, and both the whale and seal fisheries are carried on in the sea of Kamtschatka. Waterfowl are abundant everywhere.

PEOPLE AND INDUSTRY.—The total population of Siberia, exclusive of Turkestan, exceeds 6,000,000, which is not much more than one to a square mile. The population consists partly of native tribes and partly of exiles and colonists from Russia and Poland. The natives consist of various wandering tribes belonging to the Mongolian races, and they subsist chiefly by fishing and hunting, while others possess large herds of reindeer. In the steppe lands of the south-west are the wandering Kirghiz and Calmuck Tartars. The exiles and colonists reside chiefly in the western part of Siberia: these all belong to the Greek Church. Many of the native tribes are Mohammedans, while a great number profess Buddhism and other forms of idolatry.

In the neighbourhood of Irkutsk and in the basin of the Amoor a little agriculture may be carried on, and wheat and other grains are also cultivated in the south-west. The great wealth of the country, however, consists in its mines and furs. The fur-animals are caught by Russian hunters, and by native tribes who exchange the skins for tobacco, hardware, beads, and toys at fairs held for the purpose. A great number of skins are also annually paid as tribute to the Russian authorities by the native tribes. The chief hunting grounds are the eastern parts of Siberia and the Aleutian Islands. A great traffic is carried on between Russia and China, though it is limited for the most part to one point on the frontier. Russian traders assemble at Kiakhta, and Chinese merchants come to Maimatchin. The Russians bring furs, leather, and fossil ivory; the Chinese, tea, silk, porcelain, musk, and rhubarb; and the trade is carried on by barter only. The goods received by the Russian traders are conveyed to Europe, chiefly by river communication, and ultimately reach St. Petersburg or Nijni Novgorod.

TOWNS.—The towns of Siberia are few in number, and many of them are mere villages; the chief are Tobolsk, Ekaterinburg, Berezov, Omsk, Tomsk, Kolyvan, Barnaul, Irkutsk, Nertchinsk, Yakutsk, Okhotsk, Vladiovostock, and Blagoveshchensk.

Tobolsk, on the Irtish near the confluence of the Tobol, is the largest town in Western Siberia and the chief centre of trade: the population exceeds 20,000, but the houses are chiefly built of wood. **Ekaterinburg**, at the foot of the Urals, is a great centre of mining industry. In the neighbourhood a remarkable mountain, the *Blagodat*, consists almost entirely of magnetic iron ore. **Berezov** is one of the two chief centres to which exiles are sent: Irkutsk is the other. **Omsk**, which ranks as the political capital of Western Siberia, stands at the confluence of the Om and Irtish. **Tomsk**, on the river Tom, is a busy trading town with a population of 20,000. **Kolyvan**, on the Obi, has valuable mines of gold and lead. **Barnaul**, higher up the stream, is the chief centre for smelting the metals obtained from the Altai Mountains. It has a population of 13,000.

Irkutsk, on the Angara, a short distance from Lake Baikal, is the largest and best built city in Siberia, and has numerous public buildings. It is the capital of Eastern Siberia, and has a population of 28,000. **Nertchinsk**, on the Chilka, is a great mining centre. **Yakutsk**, on the Lena, carries on a great trade in furs and fossil ivory; the population is about 5000. **Okhotsk**, on the sea of that name, near the mouth of the Okhota, is a naval port and has a shipyard and arsenal. **Vladiovostock**, on Peter the Great Bay, is a place of growing importance. It has telegraphic communication with Europe by way of Nicolaievsk, Irkutsk, and Ekaterinburg. **Blagoveshchensk**, at the confluence of the Zeya and Amoor, is the residence of the governor of that district, and a place of considerable trade.

THE CHINESE EMPIRE.

THE Chinese Empire embraces China Proper, Corea, Manchooria, Mongolia, and Thibet. The total area is nearly 4,000,000 square miles, or one-fourth of the whole of Asia. The population has been estimated at 420,000,000.

CHINA PROPER.

BOUNDARIES AND EXTENT.—China is bounded on the north by the Great Wall; on the west, by Mongolia and Thibet; on the south, by Further India; and on the east by the Pacific. Its greatest breadth—along the line of the 30° parallel—is 1250 miles; its length, from north to south, is about the same, and its total area is, at least, 1,500,000 square miles. The length of its coast-line has been estimated at 2500 miles.

The **Great Wall** of China was built three centuries before the Christian era to protect the country from Tartar invasions, but it failed to do so, for a Tartar dynasty has for the last two centuries ruled in China. It commences at the Gulf of Leao-tong and extends along the whole northern frontier for a distance of 1200 miles. It crosses high mountains, is carried through deep valleys, and is continued by bridges across rivers. Its height varies from 15 to 30 ft. It is 15 ft. wide at the top, and is strengthened at intervals by square towers. The wall is composed of earth faced with masonry, but it is now in a state of decay.

There are several important islands along the coast of China. Among these are **Chusan**, near the mouth of the Yang-tse-kiang; **Formosa** (beautiful), traversed by a ridge of volcanic mountains, some of which reach the snow-line; **Hong Kong**, which belongs to England; **Macao**, which belongs to the Portuguese, and **Hainan**, at the entrance to the Gulf of Tonquin.

SURFACE AND MINERALS.—China is mountainous in the west, hilly in the centre, and level in the east. It is separated from Thibet by the *Yung-ling* Mountains, and a continuation of this chain may be traced northward as far as the Inshan. From the Yung-ling spring off at right angles the *Nan-ling* and *Pe-ling* ranges; the latter is the loftier range, and some of its peaks reach the snow-line. The north-east part of the country is occupied by a large plain equal in area to the whole of France. It consists of rich alluvial soil, probably the most productive on the face of the globe, and is for the most part laid out in rice-fields and gardens.

China is rich in minerals; perhaps the only important metal not met with is platinum. **Gold** is obtained from washing the sand in the Upper Yang-tse-kiang and in other streams; **silver** is abundant in Yunnan; copper, iron, and quicksilver in various parts. **Coal** and **iron** are abundant in the provinces of Ho-nan and Shansi; while these minerals, as well as gold, silver, lead, marble, and granite, are also met with in the province of Shantung. Extensive beds of the fine clay called **kaolin**, which is used in the manufacture of porcelain, are found in several places.

RIVERS AND LAKES.—The chief rivers are the Hoang-ho, the Yang-tse-kiang, the *Pei-ho,* which flows into the Gulf of Pe-chi-li, and the *Choo-kiang,* or Canton river.

The **Hoang-ho** has its source in two small lakes which are not more than 100 miles from the upper course of the Yang-tse-kiang. The stream, deflected by various mountain ranges, flows at first south-east, then north-west, next north-east, and then east. Below Lanchow, where it leaves the mountains, it turns northward, and flows in that direction as far as the In-shan. It then again turns eastward for some distance and then flows almost due south to the junction of the Hwei-ho, its most important feeder. Its course is now through the Great Plain, and its sides are protected by dykes and embankments. Formerly its course, from this point, was almost due east to its outlet, but about twenty years ago it burst through its northern embankment, near Kai-fong, and it now discharges its waters into the Gulf of Pe-chi-li, at a distance of 300 miles from its former outlet. The total length of the river is about 2500 miles.

The **Yang-tse-kiang** rises among spurs of the Kuen-lun Mountains, in the north-east of Thibet. It flows at first to the east and then to the south-east, and in the neighbourhood of Bathang is known as the *Kin-sha-kiang*, or "River of the Golden Sand." Near the confluence of the Ya-lung the river reaches its most southern latitude, and it then turns to the north-east. It flows in this direction for a considerable distance, being augmented by the Kia-ling, at the mouth of which stands Choon-king, a place of considerable trade. At King-chow the river enters the level country, and it now passes through an extensive depression filled with a deep alluvial soil and adorned with lakes. The *Tung-ting* lake is about 200 miles in length, and is fed by several streams which rise in the Nan-ling Mountains. Flowing now to the north-east the river is joined by the Han-kiang, at the confluence of which stand three important cities—Hankow, Hanyang, and Woochang. Following the river to the south-east we next meet with *Lake Poyang*, which extends nearly 90 miles from north to south, with an average breadth of 20 miles. It is surrounded by picturesque and finely wooded hills, and contains many fertile and populous islands. From Lake Poyang to Nankin the direction of the river is north-east. It then turns eastward and discharges its waters by a broad estuary, after a course of about 3000 miles.

CLIMATE AND PRODUCTIONS.—The climate of China varies with the latitude, but it is generally colder than we should expect. Pekin is more southerly than Naples, yet its average temperature is not much above that of London. Canton is within the tropics, yet frosts are not uncommon, and snow has occasionally fallen. The climate throughout China is also *extreme.* At Pekin the difference between the mean summer and mean winter temperature is 60°, while in London it is not 30°. At Pekin there is a cold winter for three or four months, followed by an excessively hot summer. But whatever may be the drawbacks to the climate, it seems well suited to the growth of vegetation. The mountains are generally clothed with timber, the hill sides covered with beautiful flowers, while not a spot of level land is left uncultivated. The trees include the oak, chestnut, pine, and willow, as well as the *camphor* laurel, the *varnish* shrub, the *tallow* tree, the cocoa-nut palm, and the bamboo. The fruits are similar to those of Japan, and include the fig, orange, peach, plum, apricot, and pomegranate; while among the flowers may be noticed the azalea, camellia, and passion flower; the hydrangea, cactus, and rose. Tigers, bears, monkeys, and wild cats are among the wild animals; pheasants, quails, pigeons, the magpie, cormorant, and rice-bird among the birds. The rivers, lakes, pools, canals, and even ditches swarm with fish, which are increased in quantity by artificial means.

China is not remarkable for large trees. Oaks are scarce, but pines are abundant. Palms and laurels, with cassia and caper trees, are often met with, especially in the southern provinces. The **tallow-tree** resembles the birch, and from its fruit an oil is obtained which is converted into candles. Wild animals are scarce, and are confined chiefly to the south-west. **Wild cats** are considered a dainty in China, and rats are eaten by the common people. **Pheasants** are numerous, and of beautiful plumage. **Quails** are chiefly esteemed for their fighting qualities; and, when tamed, a good fighting quail fetches a very high price. The Chinese make use of the **cormorant** in fishing, and put a ring round its neck to prevent it swallowing its prey. The **magpie** is considered sacred by the reigning family, and is so numerous as to be a nuisance to farmers. The **rice-bird** has snow-white plumage, and is of great use in keeping the marshy rice fields clear of vermin.

People and Industry.—The population of China has been estimated at 400,000,000, which is above one-fourth of the entire human race. The average number to a square mile is about 260, which is considerably less than the average in England; but the inhabitants are collected chiefly in the Great Plain and in the valley of the Yang-tse-Kiang, while other parts of the country are but thinly peopled.

The Chinese are less in stature than Europeans, and have less strength; but they bear fatigue well, and are good labourers. They are strongly attached to their homes and families, and are polite and obliging, but at the same time deceitful, untruthful, and dishonest. Gambling is a common vice, and the use of opium is very general. The Chinese language is monosyllabic, and each written character or letter represents a word or an idea. Education is highly valued, and all state employments are given by competition to the best scholars. The manufacture of paper was known to the Chinese in the first century, and printing in the seventh or eighth, but having reached a certain stage of civilization, they seem to have made no further advance. Women occupy a low position in China. Female beauty is supposed to consist in a broad face, pale features, a diminutive waist, and feet small to deformity. Marriage depends upon the will of the parents, who sell their daughters for so many dollars. The Chinese eat almost anything—dogs, cats, rats, and mice. Rice forms the principal portion of their food, pork is a favourite dish, and soup made of edible bird-nests is a great dainty. Every kind of meat is minced small and eaten with *chopsticks*. Tea is the favourite beverage, but rum also is much used, as well as a spirit distilled from rice; wines seem to be unknown. Drunkenness prevails in some parts, especially in the northern provinces. Still worse than drunkenness is the excessive indulgence in opium smoking, which is very general. The emperor is absolute, and is both priest and king, and is regarded as father of the whole nation. The most prevalent religion is Buddhism, but there is no established worship. Temples or pagodas are numerous. The feast of lanterns is held every new moon, and there is a great festival on New Year's Day.

Agriculture forms the chief employment of the people, and in no country is it more highly esteemed. In tilling the ground, eradicating weeds, and economising manure, the Chinese are very skilful, but they know nothing of agriculture as a science. Every available spot is cultivated, and unproductive corners are planted with trees. In the north, wheat and barley are grown; in the south, rice. The sugar-cane, indigo, and castor-oil plants are also cultivated. The mulberry is often planted along the borders of the canals; cotton is chiefly grown in the neighbourhood of Shanghai; and tea in the maritime provinces.

The **tea-plant**, a species of camellia, is an evergreen shrub which grows to the height of five or six feet. It is indigenous in China and Upper Assam. There seem to be two varieties of the plant, but both black and green tea may be obtained from either, the difference being in the mode of preparation. The districts which produce the finest teas are Fokien, Quang-tung, Kiang-si, Che-kiang, and Kiang-su. Great Britain alone takes more than 130,000,000 lbs. of tea every year.

The **manufactures** of China are numerous, and in some the Chinese excel. In some varieties of silks, and in the manufacture of porcelain, they have never been surpassed; their cotton manufactures are also important. The Chinese also excel in certain arts requiring patience and ingenuity, such as the making of card-cases, snuff-boxes, and fans; and in embroidery and dyeing.

The **commerce** is very considerable. Perhaps the internal trade—carried on by means of caravans, rivers, and canals—exceeds that of any other nation in the world. There is a great caravan traffic with Russia, the Chinese and Russian traders meeting on the borders of Siberia. Bhamo, on the Irrawady, is also the centre of considerable trade between China and Further India. The maritime trade is chiefly carried on with British India, America, Great Britain, and other European countries. The chief exports are tea, silks, cottons, and porcelains. The imports are cotton and woollen fabrics, opium, furs, and birds-nests.

The rivers of China afford great facilities for internal communication, especially the Yang-tse-kiang. The **Grand Canal** still further facilitates communication, and at the same time assists, with its numerous branches, in the irrigation of large tracts of land. It commences at Hang-chow, about the parallel of 30°, and runs northward for a distance of 700 miles. It crosses the two great rivers and terminates on the Eu-ho, a feeder of the Pei-ho. The first railway, from Shanghai to Kwang-wang, has recently been opened (1876).

The Chinese import the **opium** from Hindostan, the **furs** from Siberia, and the **birds-nests** from the Indian Archipelago. The bird is a kind of swallow, and the nests are chiefly composed of a species of sea-weed. The Chinese make them into a soup which is considered a great dainty.

PROVINCES.—China is divided into 18 provinces, each of which, with the exception of Pe-chi-li and Se-chuen, is ruled over by a governor. Each province has a complete organization, exchequer, army and naval force of its own, and each, besides providing for the cost of its own administration, is required to remit annually to Pekin a certain portion of its revenue to meet the expenses of the Imperial Court. Pe-chi-li and Se-chuen are ruled by officers holding the rank of governor-general. The following is a list of the provinces:—

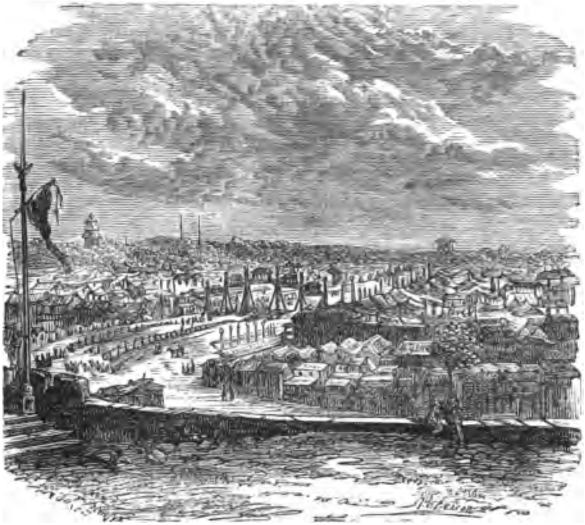
PROVINCES.

Pe-chi-li.	Shan-si.	Hoo-pe.
Shan-tung.	Ngan-whei.	Kiang-si.
Kiang-su.	Ho-nan.	Hoo-nan.
Che-kiang.	Shen-si.	Quang-si.
Fokien.	Kan-su.	Quei-chow.
Quang-tung.	Se-chuen.	Yunnan.

The word *pe* means north; *nan*, south; *tung*, east; *si*, west; *shan*, a mountain; *ho*, a river; *hoo*, a lake.

The provinces are distributed into three classes, denominated *foo*, *choo*, and *hien*, according to rank, *foo* denoting those of the first rank. The cities are classified in the same way.

Towns.—The chief towns are Pekin, Nankin, Canton, Shanghai, Hang-chow, Ning-po, Foo-choo, Amoy, Hang-Kow, Kin-te-ching, and Chee-foo.



PEKIN.

Pekin, the capital of China, stands on the Grand Canal, about 14 miles from the Pei-ho river. It consists of two distinct portions separated by a wall, and inhabited by the Tartars and Chinese respectively. The population is about 1,000,000. ***Tien-tsin,*** its port, is about 50 miles nearer the sea. **Nankin,** on the Yang-tse-kiang, was the former capital, and was once of much greater extent than at present. It is one of the principal seats for the manufacture of silk, cotton, and paper. The well-known cotton fabric called ***nankeen*** derives its name from this city. It is celebrated for its porcelain tower, or pagoda, which is 260 feet high. The population is about 300,000.

Canton, at the head of a fine estuary, about 80 miles from the sea, is the chief port of China. The population is about 1,000,000. A large portion of the inhabitants live on barges moored in the river and arranged in the form of streets. **Shanghai,** near the estuary of the Yang-tse-kiang, is the second port, and has a large trade in tea, silk, and porcelain. The population is about 300,000. **Hang-chow,** at the head of an important estuary of the same name, and at the commencement of the Grand Canal, is a great centre of trade. **Ning-po,** further east, has an extensive trade in silks, opium, and green tea. Ning-po was one of the five ports open to British merchants by the treaty of 1842: the others were Canton, Amoy, Foo-chow, and Shanghai. **Foo-choo,** in the province of Fokien, is the outlet for an important tea district.

Hankow, *Han-yang*, and *Woo-chang* form together the centre of a large inland trade. Ships drawing 20 ft. of water can reach this point, though it is nearly 600 miles from the sea. **Kin-te-ching** stands a little east of lake Poyang, where the finest porcelain clay is found. The place is said to contain about 500 porcelain manufactories, and to have a population of 1,000,000. **Chee-foo** is the chief outlet for the province of Shan-tung, and as it is the most northerly port that remains free from ice during the winter, it will probably, in time, be the centre of great trade with Japan and the North Pacific.

Corea.

Corea embraces the peninsula between the Japan and Yellow Seas with part of the adjacent mainland; its area is about 80,000 square miles. A range of mountains runs along the east coast, throwing off spurs to the west, between which are several fertile valleys. The mineral wealth of the country is thought to be very great. The climate is severe, especially towards the north where there is much mountain and forest land. *Barley* grows in the north; and in the south rice, cotton, and the mulberry, as well as a medicinal herb called *ginseng*, much valued as a tonic throughout China. Many wild animals, including the tiger and panther, range in the forests, and both fish and wild fowl are plentiful. The people seem to be a mixed race, but bear a great resemblance to the Chinese. The *dog* is considered a great delicacy, but sheep are unknown. The manufactures are chiefly silk, porcelain, and paper, and the Coreans rival the Japanese in the various uses to which the latter article is applied. The trade is carried on exclusively with China and Japan. The king has absolute power in the country, but he pays an annual tribute to the Emperor of China. The prevailing religion is Buddhism. The capital is *King-ki-tao*.

Manchooria.

Manchooria is bounded on the north by the river Amoor, on the west by the Khingan Mountains, on the south by China and Corea, and on the east by the Ussuri. The country exhibits great diversities of surface, from mountains which attain an elevation of 10,000 or 12,000 ft. to open tracts of prairie land. The mineral wealth is considerable: coal occurs in the south, and gold, silver, and copper are met with in other parts. The climate is subject to great extremes of heat and cold, and the vegetable productions include wheat, oats, millet, maize, potatoes, cotton, indigo, and tobacco. There are extensive forests, and among the wild animals may be mentioned the tiger, panther, black bear, wild boar, and various kinds of deer. A large portion of the country lies within the basin of the Amoor, and the great interior river is the Songari, about 1200 miles in length, which flows through the most fertile and densely populated part of the country.

The population is about ten millions. The Manchoos are Mongolian, but of a higher type both physically and intellectually than the Chinese, and two centuries ago they overcame the *Ming* dynasty and placed the present royal family upon the throne of China. During the wars of that period the greater part of the population was drawn off to China, and since then the Chinese have swarmed into Manchooria and now form the bulk of the inhabitants. Agriculture is the chief employment of the people. The country is divided into three provinces: Shin-king or Leao-tong, in the south; Kirin in the centre, and Tsi-tsi-har in the north. The chief towns are Moukden, Neu-chang, Kirin, and Tsi-tsi-har. **Moukden**, the chief town in the southern province, stands on an affluent of the Leao-ho. It is a large walled city with good streets and numerous shops, in which European goods may be purchased. **Neu-chang** stands upon the Leao, about twenty miles from the coast. It exports large quantities of agricultural produce. Near the mouth of the river is *Yinkoa* or *Ying-tse*, its port. **Kirin** is pleasantly situated on the Upper Songari. **Tsi-tsi-har** stands on an affluent of the Songari; it is a Chinese penal settlement.

MONGOLIA.

Under the the title of Mongolia was formerly included that portion of the Central Plateau of Asia which lies between the Kuen-lun and Altai Mountains, and extends from the Khinghan on the east to the plateau of Pamir on the west. But China has now very little hold upon that part of this vast territory which lies west of the 90th meridian. The country south of the Thian-Shan has been erected into the independent kingdom of Eastern Turkestan; while Russia is encroaching upon Dzungaria, or Soongaria, as it is sometimes called, and has already possessed herself of the fertile valley of the Upper Ili or Ele. The chief posts still held by the Chinese in this quarter are *Tchugutchak*, south of Lake Zaisan, and *Kurkara Usu*, lying to the south-east. To the eastward of Dzungaria is the country of the *Kalkas*, which is well grassed, and where large herds of camels, horses, and oxen, together with large flocks of sheep and goats are reared. But the greater portion of the eastern half of Mongolia is occupied by the Desert of Gobi.

The **Desert of Gobi** is supposed to be the bed of a dried up lake or inland sea, and occupies an area of 300,000 square miles. The general surface, which has an elevation of between 3000 and 4000 ft., is flat, but in some places there are low sandhills. Vegetation is scanty, and fresh water only obtained by digging wells. Lakes are numerous, but they are all more or less salt. The country is inhabited by various wandering tribes, whose wealth consists in camels, sheep, and goats, and who trap and shoot the wild ass for the sake of its flesh. South of the Desert, in the district of Koko-nor, there are luxuriant pastures. **Koko-nor**, or the Blue Lake, contains an island upon which there is a monastery of Llamas, or Buddhist priests. On the shores of the lake, Zhenghis Khan gained a great victory in 1224.

The inhabitants of Mongolia number about two millions, and the majority of them are Buddhists. The inhabitants of the country round Koko-nor, however, are not Mongols, but resemble the people of Thibet. The chief towns are Ourga, Maimatchin, Karakorum, and Ulia-sutai.

Ourga, on an affluent of the Selenga, is the residence of the chief Llama of the Mongols. A monastery near the town is said to contain about 10,000 priests. **Maimatchin**, a frontier town, carries on a great trade with Kiakhta, a town of Siberia. Caravans laden with tea, silks, porcelain, and rhubarb, travel from Pekin to Maimatchin and exchange these goods for furs, cloths, and ivory. **Karakorum**, on the Upper Selenga, is said to have been the birthplace of Zenghis Khan (1163), and for several years the capital of an extensive empire. **Ulia-sutai** stands at an elevation of 5700 ft., and is the capital of a large province.

THIBET.

The Plateau of Thibet lies between the Himalayas and the Kuen-lun Mountains, and has an elevation of about 14,000 ft. A range known in different parts as the Karakorum, Kailas, and Szang Mountains, divides the plateau into two parts: to the north is a tract little known, but which appears to consist of wide steppes, affording some good pasture; to the south are the basins of the Upper Indus and Sanpo. The former is a level and fertile tract, but the valley of the Sanpo seems to consist of low rocky hills with plains intersected by deep water-courses. There is scarcely any place in Thibet with a less elevation than 12,000 ft. The country is rich in minerals, including gold, silver, iron, quicksilver, precious stones, and rock-salt. Gold is worked to the north-east of Gartokh, in Western Thibet, and is supposed to be abundant in the whole range of mountains extending eastward as far as Lassa. The rivers include the upper courses of the *Indus*, *Brahmapootra*, and *Yang-tse-kiang*. There are several lakes, among which may be mentioned *Tengri-Nor* and Paltee. The former lies at an elevation of 15,000 ft., and is about 50 miles in length. It is considered a sacred spot, and there are several Buddhist monasteries on its shores and islands. *Lake Paltee* is remarkable for its ring-like shape.

The climate is cold and dry. Trees are scarce, except in the valleys or on the lower declivities of the hills, where poplars, birch, willows, and juniper are met with. *Barley* is the chief grain, and in some of the sheltered valleys fruit trees are met with. Animals, both wild and domestic, are numerous, and among these may be mentioned the sheep, yak, shawl goat, and musk-deer. The large Thibet sheep is used as a beast of burden, as is also the yak, and as many as 1000 are sometimes met with laden with grain and other produce. The *yak*, a kind of ox, is remarkable for its white silky tail, which has been adopted as the Turkish standard. The *musk-deer* is confined to China, Mongolia, and Thibet.

The Thibetans are Buddhists in religion, and the Grand Llama, or supreme head of the Buddhists, resides at Lassa. The chief occupations of the people are pastoral pursuits, the manufactures being unimportant. Lassa, however, is famous for its woollen cloths, incense-sticks, and wooden porringers, of which the Thibetans are very proud. There is an extensive traffic with the surrounding countries. Caravans proceed from Lassa to the Chinese province of Se-chuen, by way of Bathang and Li-thang. They carry gold dust, incense, fleeces, and Indian and European goods, in return for which they receive tea, silver, silks, furs, and porcelain. Nepaul and Bhotan receive all their Chinese goods by way of Thibet, and there is also a great trade with Assam and Cashmere. The chief divisions of the country are *Central Thibet*, embracing the valley of the Sanpoo and the country to the north; *Eastern Thibet*, and *Western Thibet*. The chief towns are Lassa, Shigatze, and Gartokh. **Lassa**, situated at an elevation of 11,700 ft., is a large and populous place, as it is not only the centre of considerable trade but also a place of pilgrimage. The Chinese viceroy resides here. **Shigatze**, on the Sanpoo, about 100 miles to the south-west, is a kind of second capital. **Gartokh**, the chief town in Western Thibet, stands at an elevation of above 14,000 ft. It is, however, little more than a large camp mostly belonging to traders. A good road, 800 miles in length, runs from Gartokh to Lassa.

JAPAN.

Physical Character.—The empire consists of four large islands and a number of smaller ones, stretching in a chain about 1000 miles in length, along the east coast of Asia. The chief islands are *Yesso*, *Niphon*, *Sikok*, and *Kiu-siu*, and the total area is estimated at 155,500 square miles. The surface is bold and picturesque, the whole group being traversed by chains of mountains running in a north and south direction. Some of the summits are active volcanoes, and of these *Fusi-yama*, in the neighbourhood of Yeddo, exceeds 14,000 ft. in elevation. The rivers are short and generally rapid, the soil is fertile, the coast is indented with magnificent harbours, and the country is rich in minerals.

The chief mineral is **copper**; gold, silver, iron, and sulphur also are found. Coal is abundant, and agates, carnelians, jaspers, and other precious stones are met with. The gold mines of Matsumai, at the southern extremity of Yesso, and of Sado, a small island to the west of Niphon, have long been celebrated.

The climate of course varies with the latitude. In the north it resembles that of England; in the southern islands it is as warm as France or Italy. The island of Yesso is covered with forests, but in the other islands a great deal of the timber has been cleared away, owing to the density of the population and the extension of agriculture. The chief forest trees include the oak, pine, beech, chestnut, maple, and cypress. Flowers and fruits are rich and abundant. The principal wild animals are bears, monkeys, foxes, hares, and weasels. Birds are numerous, including pelicans, falcons, cranes, and herons, besides pheasants, ducks, wild geese, and pigeons. The surrounding seas abound with fish.

Among the more remarkable of the native trees are the **varnish** tree with the juice of which the natives lacquer their furniture, the **camphor** tree, the **paper mulberry**, and the vegetable **wax-tree**. The evergreen oak and the maple are, however, the finest trees of the forest. The flowers are beautiful and of great variety, and from Japan we get the hydrangea and pyrus japonica. The fruits include oranges, lemons, grapes, peaches, melons, apples, apricots, plums, figs, and nuts of all kinds. Domestic animals are scarce, and the Japanese abstain religiously from animal food.

People and Industry.—The total population exceeds 33,000,000. The Japanese belong to the Mongolian family of nations, but they differ from the Chinese in language and character. They are distinguished by perseverance, courage, and frankness; and are clean, sober, and contented. They are also more open to the influences of western civilization, and readily adopt the manners and customs of Europe. Their food consists chiefly of rice, vegetables, and fish; and tea is the universal drink.

The progress in civilisation made by the people of Japan during the last few years is unparalleled. Railways and telegraphs have been introduced into the country, lighthouses have been erected round the coasts. European artizans have been employed to instruct the natives, and numbers of the Japanese nobility have been sent to Europe to improve their education. Schools have been established for the instruction of the common people, and colleges have been erected with European professors. The old double form of government has been abolished, and the *Mikado* is now absolute sovereign. Buddhism is the prevailing religion, but the spread of European ideas has resulted in many of the temples being closed.

Agriculture forms the chief occupation of the people, and among the articles of cultivation are rice, wheat, and other cereals, the cotton and tobacco plants, the tea-shrub, the mulberry, and the potato. Agriculture is very carefully attended to, and it is difficult, even on the mountains, to find a nook of untilled ground, except in Yesso.

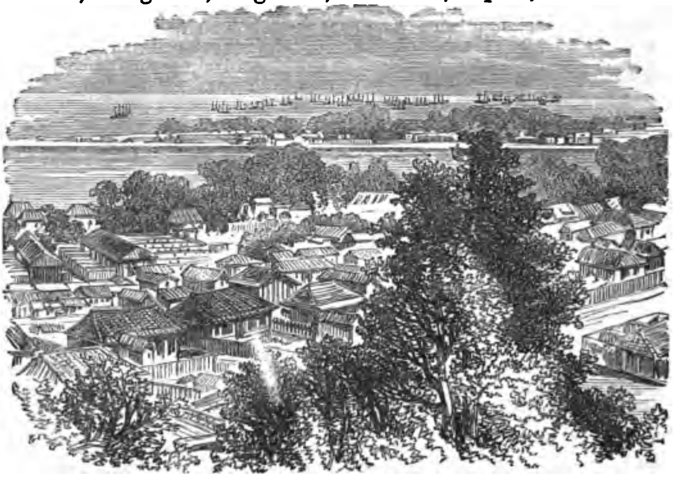
The great object of cultivation, next to rice, is the **tea plant**, which was introduced from China. Not only are there large tea plantations, but every edge on every farm consists of this shrub and furnishes the drink of the farmer's family and labourers.

The Japanese are skilful in making cotton and silk fabrics, in lacquering or "japanning," in the manufacture of porcelain, in which they are said to equal the Chinese, and in the making of paper. Their workmen also display great ingenuity and skill in articles of copper, iron, and steel, and in cabinet work. The swords of Japan have a high character for excellence.

One of the most remarkable things about the Japanese is the ingenuity displayed in adapting paper to various uses. The material is made from the bark of the mulberry tree and is of various qualities, some of it being almost as soft and flexible as cloth. Paper is made into cigar cases, trunks, and saddles, and into towels, dusters, pocket handkerchiefs, and waterproof coats. It enters largely into the construction of houses: the partitions between the rooms are generally of paper, and the windows are made of a semi-transparent kind of the same material. Paper is also used by shopkeepers in the place of twine.

The internal trade of Japan is very considerable, and there are regulations in force to protect and encourage native industry. Foreign commerce is much encouraged, and the ports of Nangasaki, Kanagawa, Hiogo, Ozaka, Nee-e-gata, Hakodadi, and Yeddo, are now thrown open to all nations. The chief exports are copper, camphor, tea, silk, lacquered ware, and specimens of porcelain. The imports consist of sugar, coffee, spices, lead, tin, ironware, and cotton goods.

TOWNS.—The chief towns are Yeddo, Yokohama, Kioto, Osaka, Nangasaki, Kagosima, Hakodadi, Saporo, Matsumai.



YOKOHAMA.

Yeddo, or *Tôkei*, as it is now called, stands on the eastern side of the island of Niphon, at the head of a large bay. It is situated in a broad fertile valley, and is surrounded by finely wooded hills. It is said to contain one street ten miles in length; the houses, however, are generally built with only one storey, as the place is subject to earthquakes. The population is about 800,000. **Kanagawa**, its port, is fifteen miles nearer the sea. **Yokohama**, however, about two miles distant, has a better harbour and has taken its place. It is a great centre of foreign trade, and a station of the Peninsular and Oriental Company's service. There is a railway between Yeddo and Yokohama.

Kioto, or *Miako*, as it is sometimes called, about 200 miles south of Tokei, is an inland town, the residence of the Mikado, and the ecclesiastical capital. The population is about 300,000. **Osaka**, on the shores of a beautiful bay, is intersected by rivers and canals, and hence has been called the "Venice of Japan." It is surrounded by tea-houses and pleasure gardens, and has a population of 375,000.

Nangasaki, on the western side of the island of Kiu-siu, is one of the oldest cities of the empire and the port to which European intercourse was for a long time restricted. It carries on a great trade with China, and has a population of 80,000. **Kagosima**, further south, is said to have a population of 200,000. **Hakodadi**, on the island of Yesso, is the outlet for a rich mineral district. **Saporo**, about 150 miles to the north, has sprung up since 1872. It has a large trade in timber, and there are a great number of saw-mills in the neighbourhood. **Matsumai**, forty miles south-west of Hakodadi, is the chief commercial port in Yesso, and the most populous town.

Besides Japan Proper, the Kurile Islands to the north, and the Loo-choo Islands to the south, are now included in the empire. The *Kurile* Islands are volcanic, mountainous, and well wooded. The inhabitants are a race called *Ainos*, of different language and manners to the Japanese. They subsist chiefly on hunting and fishing. The natives of Yesso are also Ainos. The *Loo-choo* Islands have a diversified surface and a fertile soil. The inhabitants seem to be of the same race as the Japanese.

EASTERN TURKESTAN.

EASTERN TURKESTAN is bounded on the north by the Thian Shan, on the west by the Plateau of Pamir, on the south by the Karakorum and Kuen-lun Mountains, and on the east by the Desert of Gobi. It has an area of nearly 500,000 square miles, but as the eastern and central portions are occupied by a sandy desert the habitable portion is scarcely one-fifth of the whole. The general elevation of the surface is about 4000 ft., but the river Tarim runs through a great depression which is only 1200 ft. above the sea-level. The climate is very dry, but the country is rendered productive by extensive irrigation, and corn, fruits, cotton, flax, and hemp, are largely grown. The *Tarim* is made up of two branches—the Cashgar and Yarkand—both of which rise in the Plateau of Pamir. The united stream receives several feeders from the snow-clad mountains on either side, and after a course of 900 miles it pours its waters into Lob Nor.

The inhabitants, who are Mohammedans of Turkish extraction, number about 4,000,000. They threw off the Chinese yoke in 1865, and for twelve years, under the able administration of Yakoob Beg, succeeded in maintaining their independence. Since his death, however, the Chinese have overrun the country, captured Cashgar, and driven the Emir from his throne. The chief towns are Cashgar, Yarkand, Ilchi, Khotan, Aksu, and Turfan. **Cashgar**, the seat of government, is an ancient town and has considerable trade; the population is about 30,000. **Yarkand**, however, is a much larger place and has a population of about 120,000.

WESTERN TURKESTAN.

TURKESTAN, or Independent Tartary, as it was formerly called, once embraced an extensive tract of country, stretching from the Sea of Aral to the Plateau of Pamir, and from the borders of Afghanistan to the shores of Lake Balkash. Within recent years, however, it has been considerably diminished by the encroachments of Russia, and its present area cannot exceed 100,000 square miles. The chief khanates remaining are those of Khokan, Bokhara, and Khiva. Khokan lies in a beautiful valley in the upper part of the Syr Daria, and is now confined to the south side of that river. Bokhara lies on the north side of the middle course of the Oxus, while Khiva extends along the left bank of the lower course.

Almost the whole surface of Turkestan is a plain which slopes to the Sea of Aral. On the east, where the country is mountainous, and in other parts along the banks of the rivers and canals, there are tracts capable of cultivation, but a great part of the country is a sandy desert. The chief river is the Amoo.

The **Amoo**, or *Oxus*, has its source in *Sir-i-kol*, or Lake Victoria. This lake lies on the Plateau of Pamir at a height of more than 15,000 ft., and is said to be the most elevated sheet of water upon the globe. The stream flows at first south-west, and forms for some distance the boundary on the side of Afghanistan; it then turns to the north-west and empties itself into the Sea of Aral after a course of about 1000 miles.

The climate of Turkestan is extreme—very hot summers alternating with winters severely cold. The inhabitants, who number about 4,000,000, consist of various Turkish tribes, and are followers of Mahomet. They are, for the most part, nomadic and pastoral in their habits, and they rear immense flocks of sheep and goats. The commerce was at one time very considerable, as Turkestan was a convenient centre for caravans from India, China, Siberia, and Persia; but most of the trade is now in the hands of Russia. The black fleeces of the native sheep are sent to Persia, where they are made into caps; while the fine hair of the goats is exported to India to be made into shawls. The chief towns are Khokan, Bokhara, and Khiva.

Khokan is pleasantly situated in a beautiful valley, and has a population of about 50,000. **Bokhara** is an ancient city, and was once celebrated for its bazaars. It has numerous mosques and colleges and a population of 70,000. **Khiva**, near the left bank of the Oxus, is an irregularly built place, and has a population of about 12,000.

AFGHANISTAN.

AFGHANISTAN occupies the north-eastern corner of the Plateau of Iran, and includes also a portion of the upper basin of the Oxus; its total area is 278,600 square miles. A large portion of the country has an elevation of about 4000 ft., but in the north-east the Hindoo Koosh rivals the Himalayas in height; and on the eastern frontier are the Suleiman Mountains, which, in *Takht-i-Suleiman*, attain an elevation of 12,000 ft. The chief rivers are the various streams which flow into the Oxus; the Cabul River, a feeder of the Indus; and the *Helmund*, which flows into *Lake Zurrah*, or Seistan. The climate varies of course with the elevation, but, as a rule, the summers are very hot and the winters extremely cold. At Cabul, which stands at an elevation of 6000 ft., the thermometer in winter is sometimes below zero, while at Candahar it reaches 110° in summer. In the north and east there are fertile valleys producing fruits, flowers, and odoriferous plants, and the mountains are generally clothed with timber; in the west and south there are sandy deserts. Wolves, hyenas, bears, and foxes, as well as hares and wild goats, are common; but the lion is rarely met with.

The population is about 4,000,000, and consists of Afghans, Hazarahs, Taujiks, and Hindoos. The Hindoos are found in the eastern parts; the *Hazarahs*, a Mongolian race, inhabit the highlands of the north and are pastoral in their habits; the *Taujiks* dwell chiefly in the western parts and are of Persian origin. The Afghans, who form the bulk of the inhabitants, are of the Indo-European family of nations. They consist of a number of different tribes, each under its own chieftain, and are nominally subject to the Khan of Cabul. Mohammedanism is the prevailing religion. The district beyond the Hindoo Koosh, in the valley of the Oxus, is inhabited by Turkomans, who of course belong to the Mongolian family. Agriculture is but imperfectly understood; wheat, barley, and other grains, however, are grown, and indigo and cotton to a limited extent. The horse, camel, and sheep, are the chief domestic animals. The manufactures are of no importance, but there is considerable trade carried on by caravans, and this trade centres chiefly in Herat and Candahar. The chief towns are Cabul, Herat, Candahar, Ghiznee, Bamian, and Balkh.

Cabul, the capital, stands on the Cabul River, at an elevation of 6400 ft., and has a European climate. It carries on a considerable transit trade with Hindostan, through the Khyber Pass, and has a population of 60,000. **Herat**, in the north-west, is the centre of considerable trade with Persia and Turkestan, and has a population of 45,000. **Candahar**, on a tributary of the Helmund, carries on an important trade with India through the Bolan Pass. **Ghiznee**, once the capital of an extensive kingdom, is now merely a fortress. **Bamian** stands near the Kalu Pass, which leads from Cabul to Balkh. The Pass has an elevation of 12,480 ft. **Balkh**, about 30 miles south of the Oxus, is a very ancient city, and is said to have been the birthplace of Zoroaster, the founder of fire-worship, who lived five centuries before Christ. It is now a mere village.

BELOOCHISTAN.

BELOOCHISTAN lies between Afghanistan and the sea, and stretches from the Hala Mountains to Persia; the total area is about 106,000 square miles. A great portion of the surface is rugged and barren. The province of Mekran, which lies along the coast, is parched and dry, and is said to be the hottest place in Asia. Beyond this tract the country rises in terraces to the table-land of the interior, and on these terraces there is a considerable amount of pasture-land, but a great portion of the interior is occupied by the *Desert of Beloochistan*. In the north-east, the province of Cutch Gundava, which lies in the valley of the Indus, is of great fertility, and rice and cotton are extensively grown.

The total population is estimated at 1,500,000. The inhabitants are followers of Mahomet and consist of two races, the Beloochees and the Brahooes. The *Beloochees* dwell in the west, are a pastoral and nomadic people, and are supposed to be allied to the Turkish races. The *Brahooes*, who dwell in the east, resemble the inhabitants of the Punjaub, and are a more industrious class than the Beloochees. The only town of any importance is **Kelat**, the capital, which stands at an elevation of 8000 ft. It is famed for its fruits, especially almonds and melons; the population is 12,000. *Quetta*, to the north-east, on the borders of Afghanistan, stands at the head of the *Bolan Pass*, at an elevation of 4500 ft. It was occupied by the British in 1842.

PERSIA.

Boundaries and Extent.—Persia is bounded on the north by Turkestan, Asiatic Russia, and the Caspian Sea; on the west, by Asiatic Turkey; on the south, by the Persian Gulf and the Gulf of Omaun; and on the east by Beloochistan and Afghanistan. Its length, from east to west, is 900 miles, its extreme breadth is nearly as much, and its total area is 636,000 square miles.

Persia is separated from Asiatic Russia by the rivers Aras and Attrek, both of which flow into the Caspian, but there are no natural boundaries between Persia and Asiatic Turkey on the one hand, or between Persia and the countries to the east on the other. The eastern boundary was rectified in 1872, and runs almost in a straight line from north to south, passing through Lake Seistan. The Persians style their country *Iran.*

Surface and Minerals.—Persia consists, for the most part, of a level plateau with an elevation of from 3000 to 4000 ft. On the north, west, and south the plateau is supported by mountain ranges, which are for the most part clothed with timber, and contain fertile valleys; but a great part of the interior consists of sandy deserts. In the north is the great *Salt Desert*, and in the south-east the *Desert of Kerman.* The soil here is generally of a light fawn colour, in some places encrusted with salt to the thickness of a foot, and in other parts varied with ridges of black rock.

The mountains which surround the country on three sides seem to spring off from a rugged district in the extreme north-west, connected with the Plateau of Armenia. From this district the **Elburz** Mountains run off to the eastward, south of the Caspian, and are continued into Afghanistan under the name of the **Paropamisan** Mountains. *Demavend*, in the Elburz range, reaches an elevation of 18,000 ft. On the west, the **Zagros** Mountains separate the Plateau of Iran from the valley of the Tigris, and are continued south-east along the shores of the Persian Gulf. The interior of Western Persia is also diversified with ranges and isolated summits of considerable height.

Minerals are known to abound in all the mountain ranges, but have not been worked to any extent. *Coal*, *iron*, and *copper* are met with in the west, especially in the provinces of Khorasan and Azerbijan. *Lead* is found in Kerman, and *rock-salt* is abundant all over the country. The *torquoise* is peculiar to Persia, and the mines of Nishapoor, in the south-east, are celebrated.

Rivers and Lakes.—Many of the rivers of Persia have an inland drainage, and either flow into lakes or lose themselves in the sand. The *Kerkhah* and *Kuran* flow into the Shat-el-Árab, or lower course of the Euphrates; the *Sefid-rood* (White River) enters the Caspian, and the *Bundemir* flows into *Lake Bakhtegan.*

In the north-west of Persia is the large lake **Urumiyah**, which is remarkable for its saltness. It is about 300 miles in circumference, and contains several islands. Its waters are a dark blue and very clear, but so intensely salt that fish cannot live in them, and immense quantities of salt are deposited at the bottom.

CLIMATE AND PRODUCTIONS.—The climate is subject to great extremes of heat and cold. In the north the summers are so hot that the inhabitants desert the towns and villages and live in tents on the mountains; while in winter the cold is as severe as in Russia or Canada. Along the shores of the Caspian, however, the temperature is more equable; while in the south the climate is strictly tropical. The tract along the Persian Gulf, called *Dushtisan* or *Gurmsir*, is hot and sandy, and the date-palm is almost the only sign of vegetation. Further north, in Khuzistan, the country is well watered, the hills are covered with forests of oak, and flowers and fruits are abundant. The Caspian slope also is rich in forests, fruits, and pasture. The dry plains of the interior are covered with a stunted and prickly herbage, among which wild *liquorice* and several *aromatic plants* are conspicuous. In Khorasan the *gum-ammoniac* and the *assafœtida* plants are met with. Among wild animals are lions, leopards, tiger-cats, lynxes, hyænas, wild asses, and wild sheep.

PEOPLE AND INDUSTRY.—The population of Persia is about 6,000,000, one-fourth of whom are wandering tribes called *Iliyats*, whose wealth consists in sheep, cattle, horses, and camels. The government is a despotic monarchy, the chief ruler being styled the *Shah*, but many of the mountain tribes are almost independent. The prevailing religion is Mohammedanism, but there are some Christians, and, in the province of Azerbijan, some remnants of the ancient fire-worshippers, or Parsees, are still found.

The Persians belong to the Indo-European family of nations. They are gay and lively in their manners, and have been termed the "French of the East;" but they are also said to be treacherous, cowardly, and cruel. The Iliyats consist of various tribes of different origin, though most of them resemble the Turkomans of Asia Minor. Some dwell throughout the year in tents, in winter keeping to the plains, but ascending the mountains in summer in search of pasture. Others dwell in towns, but change their abodes with the seasons.

In the interior agriculture is limited by want of water, but in the valleys of the west grains and fruits are produced. On the coast of the Caspian, and round the shores of Lake Urumiyah, rice and wheat are grown. Cotton is cultivated in the valley of the Sefid-rood, as well as the sugar-cane and tobacco plant. The vine flourishes in several districts, and the wines of Shiraz are celebrated. The mulberry is grown in the north-west, and the poppy—from which opium is extracted—all over the table-land.

The Persians display great skill in the manufacture of sword blades, and in silk and cotton fabrics. Some of the wandering tribes also produce shawls and Turkey carpets. The commerce is extensive, and is carried on chiefly by way of the Caspian and the Persian Gulf. Russia monopolises the first, which chiefly centres in Balfroosh and Astrabad; and England and India carry on a great trade with Bushire and Gombroon. From Bushire, caravans proceed through Ispahan and Teheran to the Caspian. Tabreez is the centre of considerable trade with Asiatic Turkey, goods being carried from thence through Erzeroum and Trebizond to Constantinople. The chief exports from the country are raw silk and cotton, tobacco, opium, shawls, and dried fruits; in return for which, manufactured goods are received from Europe and India.

TOWNS.—The chief towns are Teheran, Ispahan, Shiraz, Bushire, Gombroon, Kerman, Meshed, Astrabad, Balfroosh, Reshd, Tabreez, and Hamadan.

Teheran, the capital, stands on a barren plain at the foot of the Elburz Mountains, at an elevation of 4000 ft. The heat in summer is intense and the climate unhealthy, hence the Court and many of the inhabitants leave it at that season and retire to an encampment about 100 miles distant. The population is about 85,000. **Ispahan**, the former capital, stands on the Zenda-rood. It is a place of considerable trade, and has a population of 150,000. **Shiraz**, once a place of great celebrity, stands in a valley at an elevation of 4300 ft. It contains the tombs of Hafiz and Saadi, the famous Persian poets. To the north-east are the ruins of *Persepolis*, the ancient capital of the Persian monarchy.

Bushire is the chief centre of trade between Persia and India. It imports manufactured goods, indigo, sugar, and spices, and exports shawls, fruits, and bullion. **Gombroon**, on the Strait of Ormuz, is also a place of considerable trade. **Kerman** is celebrated for its shawls, carpets, and swords, the population is about 30,000. **Meshed**, the chief town in the province of Khorasan, carries on a considerable trade with Turkestan. It contains the tomb of the Caliph Haroun-al-Raschid, mentioned in the *Arabian Nights*. *Astrabad*, *Balfroosh*, and *Reshd*, are all important places on the coast of the Caspian. **Tabreez**, about 30 miles from Lake Urumiyah, is a great commercial centre, and has a population of 150,000.

Hamadan, in the province of Irak, is supposed to be the ancient *Ecbatana*, and the *Achmetha* of the Book of Esther. It has considerable trade, as it is on the line of caravan traffic between Bagdad and Teheran: it has a population of 50,000.

ASIATIC TURKEY.

Boundaries and Extent.—Asiatic Turkey includes Asia Minor, Syria (including Palestine), the greater parts of Armenia and Kurdistan; Mesopotamia, the western portion of Arabia, and the district of El Hasa on the Persian Gulf. It is bounded on the north by Trans-Caucasia and the Black Sea; on the west by the Mediterranean; on the south by Arabia; and on the east by Persia. The total area is about 764,000 square miles.

The coast-line is extensive, and with the exception of the low plain which extends from Gaza to Beyrout, is bold and rocky. Among the numerous islands which skirt the coast of Asia Minor may be mentioned Cyprus, Rhodes, Samos, Scio, and Lesbos or Mitylene. **Cyprus**, the largest island in the Levant, has an area of 4000 square miles, and a population of 150,000. It is mountainous and fertile, and abounds in fruits and grains: the capital is *Nicosia*. **Rhodes**, another beautiful and fertile island, is famous for its *Colossus*, an image of Apollo made of brass, which was erected about 300 B.C., and thrown down by an earthquake a century later. The statue lay where it fell for nearly 900 years, but when the Saracens captured the island (667 A.D.) they broke it to pieces and sold the material.

Surface and Minerals.—The plateau of Armenia has an elevation of about 6000 ft., but Mount Ararat—which lies, however, within Russian territory—exceeds 17,000 ft. To the west of Armenia is the plateau of Asia Minor, which in the east has an elevation of about 4000 ft., but in the west declines to half that elevation. The southern edge of this plateau is supported by the range of *Mount Taurus*, which averages from 4000 to 5000 ft., though some peaks exceed this elevation considerably. From the Taurus range spring the *Mountains of Lebanon*, which run southwards through Syria and Palestine, and in *Mount Hermon* attain a height of 10,000 ft. This range is continued by the mountains of Seir into the peninsula of Sinai, at the head of the Red Sea, where one summit exceeds 9000 ft.

The mountains and hill ranges which surround the plateau of Asia Minor contain several fertile valleys, especially on the south and west. The north coast also has a mountain slope covered with noble forests of oak and other European trees; but the interior consists for the most part of arid and barren plains intersected by mountain ridges. The parallel ranges of **Libanus** enclose a fertile valley between them, but the eastern portion of Syria consists of a desert which reaches almost to the banks of the Euphrates. In winter there is a scanty vegetation, but in summer it is perfectly parched and barren. **Al-Jezireh**, or Mesopotamia, between the upper courses of the Tigris and Euphrates, contains some fertile tracts, but the greater part of it is desert. Further south, the district known as **Irak-Arbia**, or Babylonia, is naturally fertile, but owing to the overflowing of the rivers there are occasionally extensive swamps and marshes. To the east of the Tigris there is the mountainous and picturesque country of **Khurdistan**, inhabited by a high-spirited and warlike race.

Mines of copper, lead, and iron, are found in various parts of Asiatic Turkey, but mining industry is not encouraged. The substance called *meerschaum* is abundant in some parts of Asia Minor. Large quantities of pipe-bowls are manufactured from it and sent to Europe by way of Constantinople.

RIVERS AND LAKES.—The chief rivers in Asia Minor are the *Kizil-Irmak* and *Sakaria*, which flow into the Black Sea; and the *Meander*, which flows into the Archipelago. There are several lakes in the interior, both of salt and fresh water; the largest of these is the *Tuz Gol* or *Koj Hissar*, which is so extremely salt that fish cannot live in it, and birds avoid it. In Syria the chief rivers are the *Orontes* and *Leontes*, which rise near each other but flow in opposite directions, and the *Jordan*, which enters the Dead Sea. The largest rivers in Asiatic Turkey are the Tigris and Euphrates.

The **Euphrates** is formed by the union of two branches—the Frat and Murad-Su. The former rises to the north-east of Erzeroum; the latter, which is the longer branch, between Mount Ararat and Lake Van. The two branches unite near Kebban, and the river flows south-west until it approaches within 100 miles of the Mediterranean. Then turning to the south-east it passes Hillah, the site of the ancient Babylon, and is joined by the **Tigris**. This river also rises in Armenia, and passing Mosul and Bagdad joins the Euphrates after a course of about 1150 miles. At Bagdad the distance between the rivers is only twelve miles, and in ancient times the streams were connected at this point by two canals. After the confluence the united stream is called the **Shat-el-Arab**, which has a further course of 150 miles before it enters the Persian Gulf. The total length of the Euphrates, independently of the Shat-el-Arab, is about 1800 miles.

Lake Van lies at an elevation of 5000 ft, and has a circumference of 200 miles. Its waters are salt, and it is noted for the beauty of its scenery.

CLIMATE AND PRODUCTIONS.—Except in the interior of Asia Minor and among the mountains of Armenia, the climate is warm and delightful, though in the Desert of Syria and in the valley of the Euphrates the heat in summer is very great. In many parts the soil is extremely fertile, or could be rendered so by irrigation, and fruits and flowers are abundant. Many of the mountain ranges are well wooded, and there is a district along the north coast of Asia Minor, about 120 miles in length by 40 in breadth, which is known as the "Sea of Trees." Here are found noble woods of oak, elm, plane, beech, and other trees of Central Europe. Among the wild animals found in various parts are the wild boar, buffalo, lynx, panther, hyena, and—east of the Euphrates—the lion.

POPULATION AND INDUSTRY.—The population of Asiatic Turkey is about 13,000,000, and includes Turks, Turkomans, Greeks, Armenians, Jews, Arabs, and Khoords. The Turks are generally diffused, but are most numerous in Asia Minor. The *Turkomans*, another branch of the Turkish family, dwell in the interior of Asia Minor. They lead a pastoral nomadic life, dwelling in tents and tending their flocks in summer, and retiring to villages in winter. The Greeks are very numerous in the coast towns, and the Armenians are very widely diffused, and form the most industrious class of the population. The Jews are found chiefly in Palestine and Syria; the Arabs are numerous in the same districts and in the desert to the east. The *Khoords* inhabit Khurdistan and the eastern parts of Asia Minor. Some have fixed habitations and occupy themselves in weaving, the working of metals, and other pursuits; others lead a nomadic life and dwell in tents.

The majority of the population are Mohammedans; but the Greeks and Armenians are Christians. Among the mountains of Khurdistan there is also a body of Christians called *Nestorians*, who are said to profess a purer faith than any of the other Eastern Christians. The *Maronites*, who dwell in the mountains of Lebanon, are in communion with the Church of Rome. The government of the various parts of Asiatic Turkey is similar to that of Turkey in Europe. Each province is under the administration of a pasha who is subject to the Sultan. Some of the wild tribes of Khoords and Turkomans, however, acknowledge no subjection to the Porte. The Turks, in Asia Minor especially, are decreasing in number, while the Greeks and Armenians are steadily increasing.

Industrial pursuits are everywhere in a backward condition owing to the oppressive exactions of the government, and the general insecurity of property. Agriculture is much neglected; great numbers of horses, cattle, and goats, however, are reared in Asia Minor; and in the neighbourhood of Angora is found a fine breed of goats celebrated for the soft silkiness of the wool. The vine, olive, orange, and other fruits are very generally cultivated and require little labour; rice, and other grains, as well as tobacco, flax, and hemp, are produced in Irak-Arabia. Syria is famous for a tobacco called Latakia; and the *date-palm* is very common and furnishes an important article of food.

The manufactures are of little importance, and consist chiefly of cotton and silk fabrics, shawls, carpets, gold and silver thread, leather, and soap. The commerce is confined to a few ports on the coast, and to the centres of caravan traffic in the interior. Means of internal communication are very defective, as there are few roads, and travelling is insecure.

TOWNS.—The chief towns are Smyrna, Kutaya, Angora, Sinope, Trebizond, in Asia Minor; Aleppo, Damascus, and Beyrout, in Syria; Erzeroum, Van, and Kars, in Armenia; and Mosul, Bagdad, and Basra, in the valley of the Euphrates.

DAMASCUS.

Smyrna, the largest city in Asiatic Turkey, is situated at the head of a fine gulf upon the western coast. It is the principal port in the Levant, and has communication by means of caravans with Damascus and Bagdad. It exports dried fruits, cotton, raw silk, goats' hair, wool, and skins. The population is about 150,000. **Kutaya** is a large town on the high road between Constantinople and Aleppo. It stands on the upper part of the Sakaria. To the north-east, on the same stream, is *Eski-shehr*, noted for its meerschaum pipes. **Angora** (an. *Ancyra*), on another branch of the Sakaria, is famous for its silky-haired goats. It was here that Tamerlane gained a victory in 1402. **Sinope**, a seaport and naval arsenal, stands on the Black Sea. It is said to have been the birthplace of Diogenes (B.C. 412). **Trebizond**, on the coast further to the east, is the centre of great trade, one chief route for carrying goods into Central Asia being from Trebizond through Erzeroum to Tabreez. In ancient times Trebizond (*Trapesus*) was the port reached by Xenophon and the 10,000 Greeks after their famous retreat.

Aleppo, the principal city in northern Syria, has a population of about 100,000. It was formerly much larger, but has suffered severely from earthquakes. It possesses considerable manufactures of silks, cottons, and gold and silver thread, and is the centre of much trade: *Scanderoon* is its port. **Damascus**, one of the oldest towns in the world, stands in the midst of a fine plain about 60 miles from the coast. It has manufactures of silk and cotton, and is a great centre of caravan trade. The population is about 120,000. To the north of Damascus are the ruins of *Heliopolis*, now called *Baalbec;* and to the north-east the remains of the ancient city of *Palmyra*. **Beyrout**, the port of Damascus, is the most flourishing of the towns on the Syrian coast. It is connected to Damascus by a good carriage road and by telegraph.

Erzeroum stands at an elevation of 6000 ft., and has a climate subject to great extremes of heat and cold. It has considerable inland trade, though less than formerly. **Van** is a flourishing town on the east side of the lake to which it gives name. **Kars**, near the Russian frontier, is a small place, but is celebrated for the heroic defence which it made under General Williams in 1855, though it was at length obliged to capitulate.

Mosul, on the right bank of the Tigris, derives its chief interest from its proximity to the ruins of Nineveh, which are on the opposite side of the river. **Bagdad**, also on the Tigris, though it has declined from its former greatness, is still a flourishing place. It has manufactures of silk, cotton, and leather goods; and a considerable trade with Aleppo, Damascus, and Basra. The population is about 100,000. About sixty miles south of Bagdad is the little town of *Hillah*, which stands amidst the ruins of Babylon. **Basra**, about 60 miles from the head of the Persian Gulf, has considerable trade with India and other parts of the East. It exports Arabian horses, precious metals, pearls, corals, rose-water, and dried fruits; and receives in exchange spices, muslins, silks, and indigo.

PALESTINE.

Palestine, or the Holy Land, forms the southern portion of Syria. It stretches from Mount Hermon to the Arabian Desert, and is bounded by the Mediterranean on the west, and the Syrian Desert on the east: the total area is only about 6000 square miles. The deep valley of the Jordan runs through the country from north to south, and the surface rises up on each side into elevated plains with alternate hills and valleys. On the west a range of heights may be traced running from north to south, bearing in different parts the names of Mountains of Galilee, Mountains of Samaria, and Mountains of Judæa. On the east side of Jordan are the Mountains of Gilead.

Among the Mountains of Galilee are the summits of **Gilboa** and **Tabor**, and the range of **Carmel**, which terminates in a bold promontory on the south side of the Bay of Acre. In Samaria are the peaks of **Ebal** and **Gerizim**; and on the east side of Jerusalem is the **Mount of Olives**, so intimately connected with the history of our Lord. The principal level tracts are the *Plain of Esdraelon*, or Jezreel, on the east side of the Carmel range; and the *Plain of Sharon*, which extends along the coast from Mount Carmel to Joppa.

The chief rivers are the Jordan and Kishon. The *Jordan* rises on the skirts of Mount Hermon, and flowing southward, passes through the *Waters of Merom* and the Sea of Galilee, and empties itself into the *Dead Sea*, after a course of about 200 miles. The *Kishon* drains the Plain of Jezreel and flows into the Bay of Acre.

The **Sea of Galilee** is about 16 miles in length, and from five to six in breadth. On the eastern side rise up bold and precipitous mountains, but elsewhere its shores are generally level. Its water is fresh and clear, and, as in ancient times, abounds in fish. Of the many flourishing cities which once adorned its western shore, Tabaria, or Tiberias, is about the only one that is left.

The climate is mild and warm, though the winters are often severe in the hilly districts, and snow sometimes falls. The soil with care may be rendered productive; but agriculture is much neglected. The produce of the ground and the occupations of the people are similar to those of other parts of Asiatic Turkey. The olive, fig, citron, vine, and orange, grow in the valleys; while the hills are often clothed with mulberry trees, sycamores, and evergreen oaks.

TOWNS.—The most important towns at the present day are Jerusalem, Hebron, Gaza, Joppa, Nablous, and Nazareth.

Jerusalem stands on a rocky plateau at an elevation of 2500 ft., and has a population of about 15,000, consisting of Christians, Turks, Armenians and Jews, each occupying different quarters of the city. The ravine on the east side, between the city and the Mount of Olives, is the *valley of Jehoshaphat*, the brook *Kedron* runs through this valley from north to south, and discharges itself into the Dead Sea In the valley of Jehoshaphat was the *Garden of Gethsemane*. Four miles to the south of Jerusalem is *Bethlehem*. Still further south is **Hebron**, which stands at an elevation of 2800 ft., and has a population of 8000. **Gaza**, near the coast, in the south-west, lies on the caravan route to Egypt, and has considerable trade: the population is about 16,000. **Joppa**, the port of Jerusalem, lies about 40 miles north-west of the city: its population is about 7000. **Nablous**, or *Shechem*, stands to the north of Jerusalem, between the summits of Ebal and Gerizim: the population is about 8000. There are still a few families of Samaritans who go three times a year to Mount Gerizim to worship. **Nazareth**, in Galilee is a small town with a population of about 3000.

ARABIA.

PHYSICAL CHARACTER.—The peninsula of Arabia is bounded on the north by Asiatic Turkey; on the west by the Red Sea; on the south by the Arabian Sea; and on the east by the Persian Gulf. It is compact in shape, and the area is about 1,200,000 square miles. The interior consists, for the most part, of a barren plateau varying in height from 3000 to 6000 ft., and round a great part of the coast lies an arid belt of country called the *Tehama*, or "low land." The tracts capable of cultivation are found chiefly in the valleys of the mountain ranges that surround the plateau, and in the central hilly region called the *Nejd*. There are no rivers, and only one or two permanent streams, but dews are copious, and springs abundant in the hilly districts. The climate is tropical, and the vegetation, though scanty, is rich in plants which produce perfumes, gums, and drugs. The wild animals include the wild ass, wolf, hyena, panther, ostrich, and various species of antelopes.

Among the gums and odours may be mentioned myrrh, frankincense, gum-arabic, and balm. **Gum-arabic** is extracted from a species of acacia; the celebrated balsam of Mecca, or *balm of Gilead*, is found in Yemen, the most fertile province of Arabia. The coffee plant, introduced from Abyssinia in the fifteenth century, senna, and castor-oil plants, are also characteristic productions of this country. Among the mountain valleys which fringe the west coast, the fig, apricot, vine, almond, and olive, are also met with.

PEOPLE AND INDUSTRY.—The population has been estimated at 5,000,000, though some authorities give double that number. The inhabitants are divided into two classes: dwellers in towns, and Bedouins or wanderers. The *Bedouins* are divided into a number of tribes all independent of each other, and each ruled by its own chief or sheikh. The Arabs belong to the Indo-European family of nations, and are all followers of Mahomet. Arabia is almost wholly a pastoral country, and the wealth of the inhabitants consists chiefly in their flocks and herds. The camel is the chief beast of burthen; but there is a fine breed of horses noted for their fleetness and sagacity. The manufactures are of no importance, but the commerce is considerable. The trade is chiefly carried on by sea, but the internal traffic by means of caravans is also large.

A great deal of trade is carried on at the **haj**, or annual pilgrimage to Mecca, the birthplace of Mahomet. All Mohammedans are required to visit this sacred spot at least once in their lives, and every year caravans of pilgrims come from Syria, Egypt, Barbary, Persia, and other parts, and bring with them the productions of the countries through which they pass. It is said that 100,000 strangers visit Mecca every year, and thus, for three or four months, it is one of the largest fairs in the East.

DIVISIONS AND TOWNS.—Arabia is generally divided into eight districts: El-tour Sinai, occupying the peninsula at the head of the Red Sea; El-Hejaz and Yemen stretching along the eastern coast of the Red Sea; Hadramaut, on the south coast; Omaun, in the south-east; El-Hasa, on the Persian Gulf; Nejd, in the interior; and the district called Jebel Shomar, lying to the north. *El-tour Sinai, El-Hejaz, Yemen,* and *El-Hasa,* now belong to the Turkish Empire. *Hadramaut* (chambers of death) is almost entirely desert, and is inhabited by several Arab tribes all at enmity with each other. *Omaun* is the most densely populated of any part of Arabia, and is ruled by a native sultan, sometimes called the Imaum of Muscat. *Nejd,* surrounded on three sides by almost impassable deserts, is inhabited by the Wahabee Arabs, who are described as a fine-looking, intelligent race of men. The inhabitants of *Jebel Shomar* are also a fine race, and their language is said to be the purest spoken in Arabia: about one-third of the population are Bedouins. The chief towns are Mecca, Jiddah, Medina, Mocha, Hodeida, Aden, Makallah, Muscat, Riadh, Haël, Petra.

Mecca, the birthplace of Mahomet (A.D. 570), is the chief town in the province of El-Hejaz. The population is about 30,000. **Jiddah**, about 65 miles west of Mecca, is the chief port on the Red Sea, and has considerable trade with Egypt, Abyssinia, and India. The population is about 20,000. **Medina**, which contains the tomb of Mahomet, lies to the north of Mecca, and is a smaller place. It is one of the stations on the pilgrim route to Mecca; *Yembo* is its nearest port. **Mocha**, on the coast of the Red Sea, in the province of Yemen, was once a considerable place, but is now in ruins; a great portion of its trade has been transferred to **Hodeida**. **Aden** belongs to Great Britain. **Makallah** is the chief port of Hadramaut.

Muscat, on the Gulf of Omaun, is the largest town in Arabia, and has a population of about 50,000. It is a place of considerable commercial importance, and the chief emporium of trade between Persia, Arabia, and India. **Riadh**, the capital of Nejd, is a fortified town, and has a population of 30,000. **Haël**, the capital of the kingdom of Jebel Shomar, carries on a considerable inland trade, and is a great mart for camels and horses. The population amounts to 20,000. **Petra**, in El-tour Sinai, is now only interesting on account of its ruins. The site of the town was a fissure or chasm, at the foot of Mount Hor, about a mile and a half in length and half a mile wide. The rocks on either side have been excavated into cisterns, stairs, theatres, temples, and tombs, some of extraordinary magnificence. It had once an extensive trade, but is not mentioned in history later than the second century.

BRITISH POSSESSIONS IN ASIA.

The British possessions in Asia comprise Aden, Ceylon, Hindostan, the Straits Settlements, Labuan, and Hong Kong.

ADEN.

Aden is a small peninsula near the south-west corner of Arabia, and 118 miles from the entrance to the Red Sea. It consists of a rocky promontory rising in some places to a height of nearly 2000 ft., and is connected to the mainland by a low sandy isthmus. The whole peninsula is of volcanic origin, and the town of *Aden*, on the east side, stands in the crater of an extinct volcano. The place enjoys almost perpetual sunshine, a cloudy day being rare. The climate is of course hot, but is not considered unhealthy. There are numerous wells, but water is not abundant, and it has a brackish unpleasant taste. The town and peninsula were purchased by the East India Company in 1839 from a native chief. The son of the chief refusing to give them up, an English force took possession of them in 1840. Aden is a place of considerable strength, and is well garrisoned. It is also used as a depôt for supplying coals to the steamers which run between Suez and Bombay. The total area of the station is about 20 miles; and the population, including the garrison, is nearly 30,000.

In the middle of the Strait of Bab-el-Mandeb is the island of **Perim**, which was occupied by Britain some years ago for the purpose of erecting a lighthouse upon it. It is garrisoned by troops from Aden. To the north-east of Aden, about the meridian of 55° east, are the **Kooria Mooria** islands, which were ceded to England in 1854 by the Imaum of Muscat. They contain some valuable deposits of guano.

CEYLON.

Ceylon is a large island near the southern extremity of Hindostan, to which it is almost connected by a ridge of islets and sandbanks called *Adam's Bridge*. It is in shape something like a pear with the broader part to the south, and it contains an area of 24,450 square miles. The southern part of the island is mountainous; but a belt of low land lies round the coast, and the northern part of the island is generally level. The highest summit is **Pedrotallagalla,**

on.
ong

of
ea.
a
nd
ic
in
st
is
re
a
re
ve
in
a
is
rs
of
g

1,
g
e
a
t.

f
f

INDIA
British Miles
0 50 100 200 300
AFGHANISTAN
BELOOCHISTAN
PUNJAUB
Cabool
Kelat
Sinde
Hyderabad
Kurrachee
Great Desert
Rajpootana
Bicaneer
Jeesulmeer
Jhodpore
Ajmeer
Delhi
Agra
Lucknow
Oude
Allahabad
Benares
Patna
Rewah
Saugor
Malwah
Odeypoor
Bhopal
Jubbulpoor
Hoshungabad
Baroda
Ahmedabad
Cutch
Runn
Gulf of Cutch
Tropic of Cancer
Lahore
Moultan
Bhawulpoor
Attock
Peshawur
R. Indus
R. Cabool
Kybur Pass
Gurhwal
NEPAUL
Khatmandu
Mt. Everest
Dhawalagiri
TIBET
Lassa
L. Palte
R. Brahmapootra or Sanpoo
Pangong L.
BOOTAN
Assam
Goalpara
Silhut
Dacca
Tipperah
Jessore
Bulloah
BENGAL
Moorshedabad
Bhaugulpoor
Dinagepoor
Purneah
Burdwan
Balasore
Mouths of the Ganges
Chittagong
BURMAH
Berar Provinces
30
25
35
70
75
80
85
90

ARABIAN SEA
BAY OF BENGAL
Berar Provinces
Nizams Dominions
Mysore
Laccadive Islands
Maldive Islands
CEYLON
Bombay
Madras
Hyderabad
Colombo
Malabar Coast
Coromandel Coast
Gulf of Cambay
Gulf of Manaar
Palk Strait
Nagpoor
Oomrawutty
Raipoor
Sonepoor
Kuttack
Juggernaut
Ganjam
Chilka L.
Calingapatam
Vizagapatam
Rajahmundry
Coringa
Masulipatam
Mths. of the Kistna
Mths. of the Godavery
Poonah
Satara
Bankote
Rutnagherry
Bassein
Daman
Surat
Diu I.
Nassick
Dowlatabad
Elora
Aurungabad
Ahmednuggur
Assye
Chandah
Mahoor
Chinnoor
Indrawati R.
Jeypoor
Chicacole
Cowlas
Beder
Sholapoor
Golconda
Secunderabad
Bejapoor
R. Kistna
R. Godavery
R. Beemah
Belgaum
Durwar
Goa
Panjim
Kurnool
Bellary
R. Toongabudra
R. Pennaur
Nellore
Pulicat L.
Onore
R. Shirwatti
Nuggur
Bangalore
Mangalore
Seringapatam
Coorg
Mysore
Cananore
Mahe
Neilgherry Hills
Calicut
Beypoor
Cochin
Travancore
Trivanderam
C. Comorin
Trichinopolee
Tanjore
Madura
Pondicherry
Tranquebar
Carical
Adams Bridge
Trincomalee
Batticaloa
Kandy
Adams Peak
Point de Galle
Mouths
BRIT. BURMAH
20
15
10
70
75
85
90
The Independent States are Nepaul & Bootan
William Collins, Sons & Co. London & Glasgow.

which exceeds 8000 ft., and **Adam's Peak,** from which Buddha is said to have ascended to heaven, is not much less in height. The climate is tropical, but the heat is somewhat tempered by the sea breezes, and the temperature among the mountains of the interior is pleasant. *Nieura Elia,* on the south side of Pedrotallagalla, and at an elevation of 6300 ft., has an almost European climate, and is used as a sanitarium. Streams are numerous, but of no great length; the principal river, the **Mahawelli Ganga,** rises near Adam's Peak, and empties itself near Trincomalee, after a course of about 200 miles.

Ceylon is richer in precious stones than in useful metals: the ruby, amethyst, cat's-eye, garnet, topaz, and sapphire are met with. The pearl fishery in the Gulf of Manaar is not so productive as formerly. The island is remarkable for the luxuriance of its vegetation. The forests abound with palms, and with ebony, rose, satin, and other ornamental woods. The characteristic productions of Ceylon, however, are *coffee, cinnamon,* and the *cocoa-nut* palm. Most of the animals met with in Hindostan are found here, except the tiger: elephants are very numerous. The bulk of the inhabitants are of Hindoo origin, and are called Singhalese. The prevailing religion is Buddhism. The chief towns are *Colombo,* the present capital, on the west coast; *Kandy,* the ancient capital, in the interior; *Point de Galle,* on the south coast; and *Trincomalee* on the east.

Ceylon at one time belonged to the Portuguese, and afterwards to the Dutch. The coast district came into the possession of the English towards the close of last century, but the interior remained in the hands of a native king until 1815. The present population is about 2,500,000, of whom about 500,000 are white people.

INDIA, OR HINDOSTAN.

EXTENT AND BOUNDARIES.—Hindostan is the second of the three peninsulas which appear on the south coast of Asia. It is triangular in shape, with the Himalayas for the base of the triangle, and Cape Comorin for the apex. Its length, from north to south, is about 1860 miles; its greatest breadth, from the Suleiman Mountains to the banks of the Brahmapootra, about 1500 miles; and its area exceeds 1,400,000 square miles. On the north, it is bounded by the Himalayas;

on the west, by the Suleiman and Hala Mountains, and the Arabian Sea; and on the east, by the Bay of Bengal.

The boundaries here given refer to Hindostan properly so called; but when we speak of the political divisions, we shall also include Assam and British Burmah—the latter comprising Aracan, Pegu, and the Tenasserim Provinces. If we include these, the total area of Hindostan amounts to 1,558,254 square miles.

COAST-LINE.—Commencing at Kurrachee, in the north-west, we pass the low coast, formed by the delta of the Indus, and reach the peninsula of Cutch. To the north and east of this peninsula is the district known as the Runn of Cutch.

The **Runn of Cutch**, in the dry season, is a parched desert covered with saline incrustations and numerous salt lakes, and inhabited by wild asses, monkeys, porcupines, and flocks of sea fowl; in the rainy season it is an extensive marsh, or shallow lake. Sir Charles Lyell thought that in this tract we had probably an example of the way in which beds of salt have been formed in past ages.

Leaving the Gulf of Cutch we pass the peninsula of **Kattiwar** and arrive at the **Gulf of Cambay.** The small island called **Diu** belongs to the Portuguese. From this point the west coast of Hindostan runs in an almost unbroken curve to Cape Comorin. The Malabar coast, as this is called, differs from the eastern, or Coromandel, coast in some important particulars. It is rocky, and, although the indentations are small, it contains several good harbours. The Coromandel coast, on the other hand, is destitute of harbours, and is exposed to a powerful surf. It is also backed by broad parched plains, while close to the shore, on the west coast, rise up the well-watered Ghauts. Among the harbours deserving of notice on the Malabar coast are those of Bombay, Goa, Mangalore, and Cochin.

The **Laccadive Islands** are of coral formation, and the only valuable produce is the cocoa nut. Some of the islands belong to Britain, while others are subject to the native principality of Cananore. The **Maldive Islands** are a more considerable group, and the inhabitants make expert sailors. They are governed by a Sultan who pays an annual tribute to the Governor of Ceylon.

Rounding **Cape Comorin** we enter the **Gulf of Manaar,** which is separated by Adam's Bridge from **Palk Strait.** The coast now runs almost due north to the mouth of the Kistna, and we pass the **Pulicat Lagoon** to the north of Madras. The coast next runs to the north-east, and, following the shore line, we pass **Chilka Lagoon** to the south of Pooree which is famous for the Car of Juggernaut. Passing the delta of the Ganges and Brahmapootra we arrive at the district of Chittagong. The coast now runs southward to **Cape Negrais,** and is rocky, deeply indented, and skirted with numerous islands. Rounding Cape Negrais we enter the **Gulf of Martaban,** which is bounded on the east side by the Tenasserim provinces, and on the west by the Andaman and Nicobar Islands. The Tenasserim provinces extend southward to the **Isthmus of Kraw;** and the southern part of the coast is skirted with numerous islands thickly clothed with vegetation. The total length of the coast-line of British India is about 4500 miles.

The **Andaman Group** consists of four principal and several smaller islands. They are all mountainous, and covered in great part with forests. The inhabitants belong to the Papuan race, and are in a very degraded state: they live chiefly on fish. A penal settlement has been established here by the Indian Government. The chief town is *Port Blair*, where Lord Mayo was assassinated (1872). The **Nicobar Islands,** lying to the south, were ceded to England by Denmark in 1869.

SURFACE.—The physical features of Hindostan are on a large scale, and are well defined. Commencing on the north we have the vast system of the **Himalayas,** which stretch in a curve from north-west to south-east for a distance of 1500 miles. At the foot of the Himalayas, and extending as far south as the Vindhya Mountains, is the *Great Plain of Hindostan.* South of the **Vindhya Range** is the *Deccan,* a plateau with an average elevation of 2000 ft. This plateau is bounded by the Eastern and Western **Ghauts,** which unite in the south, and form a mountain knot known as the **Neilgherry Hills.** The Western Ghauts, which reach an elevation of 6000 ft., are continued to Cape Comorin; but immediately south of the Neilgherries is a break called the *Gap of Coimbatore.* Returning now to the Great Plain of Hindostan, we find that the isthmus, which connects the peninsula of Kattiwar with the mainland, is occupied by the *Plain of Guzerat.* From this plain springs up a low range of hills which, under the name of the **Aravulli Mountains,** runs to the north-east, as far as the banks of the Jumna, and divides the Plain of Hindostan into two parts: on the east is the Plain of the Ganges; on the west is the basin of the Indus and the *Great Indian Desert.* The elevated land between the Aravulli Mountains and the Vindhya is called the *Plateau of Malwa;* and to the north of the Neilgherries is the *Plateau of Mysore*, which has an elevation of about 4000 ft.

The **Himalaya** system extends from the north-western extremity of Cashmere, where it meets the Plateau of Pamir and the Hindoo Koosh Mountains, to the eastern extremity of Assam. Its average elevation is from 15,000 to 18,000 ft., but a number of peaks exceed 20,000. Lofty as the Himalayas are, they form but a buttress to the table-land of Thibet, where boundless plains spread out at an elevation of 16,000 ft., and yield pasturage to innumerable sheep. Three rivers only force their way through the Himalayas—the Indus, the Sutlej, and the Brahmapootra, or Sanpoo. The passage of the Sutlej is a tremendous gorge where the mountains rise on either side to the height of 20,000 ft., while the river itself makes a rapid descent of 10,000 ft. **Mount Everest**, the culminating point in the system, and the highest summit on the globe, reaches an elevation of 29,002 ft. **Kunchinginga** and **Dhawalagiri** both exceed 28,000 ft.; and **Nanga Parbat** reaches an elevation of 26,000 ft. North of the upper valley of the Indus is the **Karakoram** range, which is sometimes considered as belonging to the Himalayas. It is crossed in its narrowest portion by the traders at the *Mustagh Pass*, and towering above the pass is a summit 28,000 ft. high. Further east is the *Karakoram Pass*, 18,000 ft. in height. Some of the passes into Hindostan are nearly as high: the *Niti Pass*, in Gurwal, near the source of the Ganges, is higher than the summit of Mont Blanc, and there are others still more lofty. It is a remarkable fact that the snowy summits of the Himalayas do not, as a rule, lie in the main axis of the mountains, but in spurs which spring off to the south, at right angles to the main chain; thus the line of watershed is sometimes sixty, or even a hundred miles behind the snow-covered peaks. Along the base of the Himalayas extends an outer range of varying altitude, known as the **Sivalik Hills**, which rise up abruptly from the Plain of Hindostan. At the foot of these hills extends the flat swampy jungle called the *Terai*.

The **Suleiman Mountains**, which form part of the western boundary of Hindostan, run southward from the *Khyber Pass* to the neighbourhood of Mittun Kote. The average elevation is 6000 ft., but **Takht-i-Suleiman** (*Throne of Solomon*) reaches a height of 11,000 ft. South of the Suleiman range, and about 60 miles further west, are the **Hala Mountains**, which extend to the neighbourhood of Kurrachee. At the northern extremity of the range is the *Bolan Pass*, leading into Beloochistan. This pass is commanded on the side of Beloochistan and Afghanistan by the town of Quetta; and by a treaty with the Khan of Khelat, the English have the right of occupying this post whenever they may think it desirable.

The Western Ghauts are higher than the Eastern Ghauts, and the Neilgherries are loftier than either; **Dodabetta**, the culminating peak, reaches a height of 8600 ft. South of the Vindhya range, and running between the rivers Taptee and Nerbudda, are the **Sautpoora Mountains.** The Vindhyas are continued eastward under the name of **Kymoor Hills**, and reach the Ganges near the junction of the Sone. A parallel range, known in its eastern extremity as the **Rajmahal Hills**, forms the watershed between the Ganges and the streams which flow across the Deccan.

In Assam the southern boundary is formed by the **Patkoi** or **Naga Mountains**, which unite with the Himalayas on the western bank of the Upper Irrawady. These mountains, after throwing off a spur to the west, known as the **Khasia Mountains**, are continued southward, and form the eastern boundary of Aracan, where they are known as the **Yomadung Mountains**: they terminate in Cape Negrais.

The Naga Hills are inhabited by native tribes who have scarcely yet emerged from barbarism. An expedition was recently sent out from Calcutta to punish the natives for the massacre of an exploring party. Seven villages were attacked and destroyed. The houses in these villages were all supplied with plain, but carefully made furniture, cut out of solid blocks of wood. The houses were generally spacious and strongly constructed, one of them measuring 200 ft. in length. Cattle, pigs, goats, and fowls were abundant.

MINERALS.—The **diamond** and other precious stones are found in various parts of British India. **Gold** is found in Mysore, Assam, and the Tenasserim provinces; but the mineral wealth of India chiefly consists in its coal, iron, tin, lead, copper, and salt.

Beds of **coal** stretch across India from the district of Cutch to the eastern extremity of Assam; it is also found at intervals along the line of the Himalayas as far westward as Punjaub. The chief district is that of Burdwan, to the north-west of Calcutta, and the mines of Ranegunge are especially valuable. Coal is also met with in the valley of the Godavery and Nerbudda, and in the provinces of Tenasserim and Aracan.

Iron-ore is widely diffused, and is frequently associated with coal. It is met with in the Khasia Mountains; at Gurwal and Kumaon, in the Himalayas; at Moorshedabad, near the Burdwan coal-field; in the Kymoor Hills, in the valley of the Nerbudda, at Beypoor near Calicut, and in the valley of the Wain Gunga, a feeder of the Godavery, in the Central Provinces.

There is a rich deposit of **tin** in the Tenasserim provinces; **lead** and **copper** are also found there, as well as in Pegu. **Salt**, though scarce in some parts, is very abundant in others: the best comes from Jeypoor, in Rajpootana. At Kalabagh, in the Punjaub, where the Indus cuts through the Salt Range, deposits one foot in thickness appear in the cliffs, between thin beds of clay. **Nitre**, or saltpetre, is obtained from the neighbourhood of Mooltan, in the Punjaub; from Oude, and from other parts of Hindostan.

RIVERS.—In Northern India there are three large rivers which rise at no great distance from each other: the Ganges, Brahmapootra, and Indus. Besides these there are six others of some importance: the Mahanuddy, Godavery, Kistna, and Cauvery, which flow into the Bay of Bengal; and the Taptee and Nerbudda, which flow into the Arabian Sea. It will be noticed that most of the rivers which drain the Deccan flow eastward. This we can readily understand, for the Western

Ghauts being higher, more continuous, and better watered than the hills on the Coromandel coast, are well adapted for giving rise to streams, but afford no outlet to the streams themselves. The direction of the rivers also shows us that the whole surface of the Deccan slopes towards the east.

The **Ganges** issues from a low arch called the "Cow's Mouth," at the base of a huge glacier about 13,000 ft. above the sea. It flows for some distance among the mountains, and at Hurdwar, where it enters the Great Plain of Hindostan, it has an elevation of only 1000 ft. above the sea-level. It now flows south-east, and at Allahabad is joined by the Jumna. This river rises to the west of the source of the Ganges, and flows past Delhi and Agra. On its way it is augmented by several streams, the principal of which is the Chumbul, which rises in the Vindhya Mountains. From Allahabad to Rajmahal the Ganges flows in a winding course to the east and passes Benarcs and Patna. It is now of considerable width, having been augmented by the Goomtee, Gogra, Gunduck, and Coosy on the left bank; and the Sone on the right. About ten miles above Rajmahal the river turns southward, and soon afterwards the delta commences. Of the two principal channels which enclose the delta, the eastern and larger branch keeps the name of Ganges; but the Hooghly, on which Calcutta stands, is invested by the natives with greater sanctity. The whole delta is a vast alluvial flat formed, in the course of ages, by the mud brought down by the river. It is intersected by numerous channels, interlacing each other, and the water enters the sea by from twelve to twenty mouths. The pestiferous tract round the mouths of the Ganges is called the *Sunderbunds;* it is covered with jungle, and swarms with tigers and other beasts of prey. The total length of the river is 1500 miles, and the area of its basin 390,000 square miles.

The **Brahmapootra**, under the name of **Sanpoo**, rises in Thibet, near the source of the Indus, at an elevation of 14,000 ft. It flows at first in an easterly direction for a distance of 700 miles, and then turning south forces its way through the Himalayas. Issuing from the mountains under the name of **Dihong**, it is joined by the Brahmapootra proper. This stream rises in a snow-capped range in the north-east of Assam, and flowing to the south-west it gives its name to the stream it joins. The Brahmapootra continues its south-westerly direction through the middle of Assam and passes Gowhatty and Goalpara. In this part of its course it is said to receive as many as sixty feeders, and the volume of water which it brings down to the Bay of Bengal exceeds that supplied by the Ganges. Below Goalpara it turns to the south, and, with a channel five miles in width, joins the main outlet of the Ganges. The river, from the source of the Sanpoo, is 1800 miles in length, and the area of its basin is 361,200 square miles.

The **Indus** rises at an elevation of 16,000 ft., not far from the sources of the Sutlej and Sanpoo. It flows at first to the north-west, passing the towns of Leh and Iskardo, and just before reaching the latter it receives the Shyok, which comes from the neighbourhood of the Karakoram Pass. At Accho, where it enters a great gorge in the Himalayas, its elevation is only 4500 ft., so that it has descended above 11,000 ft. in less than 800 miles. Issuing from the mountains, the Indus is joined at Attock by the Cabool, which flows through the Khyber Pass and brings with it the waters of the Kooner and other streams. It then flows southward, and at Mittun Kote is joined by the Chenaub, which brings with it the waters of the Punjaub. The Punjaub, "the plain of the five rivers," as the name signifies, is drained bv the Sutlej, Beas, Chenaub, Ravee, and Jhelum.

The **Sutlej** has its source, at an elevation of 15,000 ft., in two lakes, *Manasarowar* and *Rakas Tal*, sacred both to the Hindoos and Thibetans. Its course is at first north-west through a channel 4000 ft. in depth, which it has cut in the alluvial soil. It then traverses the Himalayas by a tremendous gorge, and when it issues from the mountains has an elevation of 1000 ft. only. Soon afterwards it receives the Beas, and then joins the **Chenaub**, which brings with it the waters of the Ravee and Jhelum. The **Jhelum** rises in Cashmere and passes Srinagur, the capital of the state.

From Mittun the Indus flows at first south-west and then south. Its delta begins to form at Tatta, about sixty miles from the sea, and extends along the coast for about double that distance. The total length of the Indus is 1800 miles, and the area of its basin is about 372,700 square miles.

The **Mahanuddy** rises in the Central Provinces, and drains the north-eastern corner of the Deccan. It empties itself below Cuttack, by a large delta, into the Bay of Bengal, after a course of 520 miles. The **Godavery** rises near the northern extremity of the Western Ghauts, about 50 miles from the coast. Near its source is Nassick, famous for its mission college, where some of Livingstone's most faithful followers were trained; on a feeder is Ellora, famous for its caves. The chief feeder is the Pranheta, which brings with it the combined waters of the Pain Gunga and the Wain Gunga: near the source of the former is Assaye, celebrated for its battle (1803); and on an affluent of the latter stands Nagpoor. The river now takes a more southerly direction and enters the sea by a delta after a course of 900 miles. There are few important towns on this river, but the forests along its banks supply excellent timber. The **Kistna** rises near Mahabaleshwar, and, flowing south and then eastward, is joined by the Beemah on the left bank, and the Tongabudra on the right. Nearer its mouth it receives another small stream on which stands Hyderabad, the capital of the Nizam's dominions, and Golconda, once famous for its diamonds. It empties itself by a delta which almost unites with that of the Godavery. Its total length is 800 miles. The **Cauvery** rises not far from the source of the Tongabudra, and, flowing south-east past Seringapatam and Trichinopoly, forms a delta on which stands Tanjore and Tranquebar. The northern branch of the delta is called the River **Coleroon**. The total length of the Cauvery is 470 miles. The **Taptee** flows along the southern base of the Sautpoora Mountains, and empties itself into the Gulf of Cambay, below Surat, after a course of 440 miles. The **Nerbudda** rises near the sources of the Sone and Mahanuddy, and flows to the west between the Vindhya and Sautpoora Mountains. Its current is obstructed by rocks and shallows, and its banks clothed with dense jungle. Its total length is 800 miles.

CLIMATE.—Hindostan lies between 8° and 37° north latitude, the greater portion of it, therefore, is within the tropics. The isotherm of 80° passes through the north of India, and some parts of the Coromandel coast have a still higher average annual temperature. The temperature is, of course, modified by the surface elevation, and in Southern India the adjacent seas temper the excessive heat. Hence there are sanataria in various parts, whither Europeans resort in order to recruit their health. Among these sanataria may be mentioned *Simla*, near the Upper Sutlej; *Darjeeling* in Sikkim, directly north of Calcutta; *Mahabaleshwar*, in the

Western Ghauts; and *Ootacamund*, in the Neilgherries. Snow is never seen on the plains of India, and as the snow line is at an elevation of nearly 16,000 ft., the Himalayas (*the abode of snow*) is the only range of mountains in India where there are snow-capped summits. Glaciers descend as low as 10,000 ft., and in one of these the Ganges has its source. The Karakoram range possesses some magnificent glaciers; that of Mustagh is thirty-six miles in length; and another in the same range is said to be sixty miles long.

It is a curious fact that while the snow-line on the south side of the Himalayas is at an elevation of only 15,500 ft., on the north side it is 19,000. This is doubtless owing to the fact that while the atmosphere on the south side is laden with moisture, the air on the north side is very dry, and, consequently, not only will the coating of snow be thinner, but it will more easily disappear by evaporation.

The rains of Hindostan depend upon the monsoons which blow with great regularity. From April to October the south-west monsoon prevails, and this is the rainy season for the Malabar coast; from October to April the north-east monsoon prevails, and this is the rainy season for the Coromandel coast. As the south-west monsoon blows over a great expanse of water, it brings with it abundant showers; while the north-east monsoon, coming for the most part over the land, is a comparatively dry wind. Hence the climate of Hindostan may be divided into three seasons: the hot season, from March to June; the wet season, from June to October; and the temperate season, from October to March. The average quantity of rain, if we take in the whole of Hindostan, is not much greater than the average quantity which falls in England; for there are parched districts along the Coromandel coast, and in the Great Indian Desert, and in the Deccan the fall is rather scanty; but in some parts the amount of rain is excessive. At Mahableshwar the annual fall exceeds 300 inches; and at Cherra Poongee, in the Khasia Mountains, it is double that quantity.

When we consider that within the tropics rain only falls for three or four months in the year, and seldom during the night, we can understand how much heavier the showers are there than in countries like England; and this is one reason why some parts of India are so subject to floods—the rivers not being able to carry off the water with sufficient rapidity. The enormous quantity of rain at Cherra Poongee all falls in about four months. Sometimes 30 inches—an amount equal to the total average quantity which falls in England during the course of a year—has fallen in four hours.

VEGETATION.—As almost the whole of British India lies within the tropics the vegetation, wherever there is a sufficient supply of moisture, is abundant and luxuriant. Graceful **palms**, arborescent **ferns**, tall grasses, fruits, and **spices** are its characteristic features. The date, areca, palmyra, and cocoa-nut palm are all Indian. Trees of the **fig tribe** grow to an enormous size; a banyan, on an island in the Nerbudda, covers four acres of ground, and could shelter a whole army. **Teak**, iron-wood, satin-wood, and other forest trees clothe the hill ranges; and among the fruits and spices may be mentioned the date, almond, pine-apple, plantain, banana, mango, and various species of the ginger and pepper tribe. The Western Ghauts, and the mountains of Aracan and the Tenasserim provinces, are clothed with forests of teak. Forests of valuable timber are also met with in the valleys of the Godavery and Nerbudda.

At the base of the Himalayas, and up to an elevation of 5000 ft., the vegetation is strictly tropical. Next we meet with the maple, cedar, oak, and pine, with an undergrowth of the scarlet rhododendron, the graceful veronica, the ranunculus, and nasturtium. Still higher European and Alpine forms appear, until at length we reach the region of perpetual snow. Tea is indigenous in Assam, and the cotton plant, the orange, and the vine are of Indian origin, but these and other articles of cultivation will be mentioned in connection with the industry of the people.

ANIMALS.—Among the native wild animals may be mentioned the elephant, lion, tiger, leopard, hyena, jackal, wolf, and rhinoceros; deer, of various kinds, and monkeys are numerous. The lion is confined to the north-west of India; the rhinoceros is met with in the forests at the foot of the Himalayas and in the Sunderbunds. Among birds may be mentioned the **peacock**, a native of the country; **parrots** and cockatoos of beautiful plumage; and the **adjutant** bird, which frequents the towns of Bengal, and is of great service in destroying reptiles and in clearing the streets of refuse. Reptiles are numerous, and include the crocodile, which is common in all the great rivers; the deadly **cobra** or hooded snake, which is tamed by the Indian jugglers; and the huge **python**, which represents the boas of tropical America.

PEOPLE.—The natives of Hindostan comprise a great many nations differing from each other in language, manners, and degrees of civilization. There are at present spoken in India by the most civilised races no less than 25 distinct languages or dialects; and if we include the tribes, more or less bar-

barous, there are at least 50 languages, indicating as many distinct tribes. Ten of these languages have a written character and literature; and among these may be mentioned the Hindostanee, the Bengalee, the Mahratta, the Tamul, the Telinga, and the Canara languages. The Hindostanees live in the upper valley of the Ganges; but as they are intellectually the most vigorous of all the native tribes, and, next to the Bengalees, the most numerous, they have given their name to the whole country. All these are **Hindoo** races and worshippers of Brahma. Next in number are the **Mohammedans**, who are numerous in the Punjaub, in Bengal, in the Nizam's dominions, and in Mysore. The **Parsees**, or fire worshippers, are of Persian extraction, and form but a small fraction of the whole population; but they are distinguished by their wealth, intelligence, and commercial enterprise. Almost equally small is the number of English and other **Europeans** who have settled in India; but, as they fill most of the civil and military posts, and form at least one-half of the army, their influence is paramount. Besides these there are certain black tribes, such as the *Bheels*, *Coolies*, and *Gonds*, who inhabit the hills which border the Deccan, and whom some think are the original inhabitants of the country.

That the Hindoos are a very ancient people is proved by the fact that they possess three dead languages which were once spoken in the country, and from which many of the present dialects seem to be derived. These are *Sanskrit*—the language in which the sacred writings of the Brahmins are written: the *Sariswati* or *Pracrit*, a simpler and, therefore, a modern form of the Sanskrit; and the *Pali* or sacred language of the Buddhists. The Pracrit and Pali were probably of the same age, but arose in different parts of India: the former in the northern part of the Ganges valley; the latter in Behar. But though the inhabitants of Hindostan are so ancient a people, little is known of their history until the first Mohammedan invasion in the year 1000. In that year **Mahmoud**, sovereign of Ghiznee, in Afghanistan, made the first of thirteen successful invasions, in the course of which he pushed as far as Bundelcund and Guzerat. No permanent occupation of any portion of the country, however, seems to have been attempted. In 1206, however, an Afghan dynasty was established at Delhi which lasted three centuries. At the same time other Mohammedan princes established themselves in Malwa, Bengal, and the Deccan. In 1525, **Baber**, the fifth in descent from the celebrated Timour, invaded Hindostan and established the Mogul dynasty. Among the "Great Moguls" were Akbar, Shan Jehan, and **Arungzebe**, under whom the Mohammedan power acquired its greatest extent. After his death the Mogul empire began to decline. Several Hindoo tribes revolted, among which were the Mahrattas, the Rajpoots, and the Sikhs. **Nadir Shah**, King of Persia, taking advantage of the unsettled state of the country, invaded India, took Delhi, and, after remaining there two months, returned home with immense spoil (1738). It was shortly after this event that the English took an active part in the internal affairs of India; and through the exertions of Clive and Hastings was laid the foundation of an empire which has eclipsed that of the Great Mogul.

The present population of British India amounts to 240,000,000, four-fifths of whom are Hindoos. The population varies in density from 700 persons to a square mile in some parts of Oude and Bengal to ten in some of the hill districts. One-half the population of Hindostan is contained in the valley of the Ganges. On the Deccan the density of population is much less, but it increases again in Southern India, especially in the valley of the Cauvery and round Tanjore.

One of the most remarkable characteristics of Hindoo society is its division into castes. The Hindoos are divided into four great classes or castes, Brahmins or priests, soldiers, merchants, and labourers. Each of these castes has split up into a number of sub-divisions, so that at present there are, it is said, at least 200 castes in India; and, as a rule, one caste may not marry, eat, or associate with another. In scarcely any tribes, however, are all the four castes complete; in Bengal, for example, the second and third orders are wanting, and the great distinction is between those who are Brahmins, and those who are not. But these castes are fast giving way before the spread of European ideas.

INDUSTRY.—It is said that the arts in which the Hindoos have made the most progress are agriculture, weaving, dyeing, and architecture. The numerous temples and palaces throughout India testify to the taste and skill of the natives as architects. The mausoleum at Agra, which Shan Jehan erected to the memory of his wife, is one of the most magnificent structures ever built, and is said to have cost £3,000,000; and there are temples at Ellora, Tanjore, and other places which still excite our admiration and astonishment. Agriculture, however, forms the chief employment of the people.

Agriculture.—With some few exceptions the soil is everywhere adapted to some valuable crop; but vast tracts of land yet remain uncultivated, and the system of cultivation itself is very imperfect. The natives, however, display great skill in the construction of embankments, tanks, and reservoirs for purposes of irrigation. This is essentially necessary, as an unusually dry season will sometimes cause wide-spread famine, as was the case with Bengal in 1874. The buffalo and ox are used with the plough; the elephant, camel, and ass are beasts of burthen; the horse is generally reserved either for war or pleasure. Our common poultry are supposed to be natives of Hindostan. The chief articles cultivated are rice, cotton, indigo, the opium poppy, the vine, mulberry, and sugar cane; the tea, coffee, and chinchona plants; hemp, jute, fruits of various kinds, pepper, ginger, potatoes, and other vegetables.

Rice is grown to a large extent in Lower Bengal, in the valley and delta of the Godavery, and in other parts. It forms an important article of food in these districts, but not to the exclusion of other grains. Millet and wheat are also grown to a considerable extent, and maize and oats have been introduced from Europe.

Cotton is indigenous to India, and grows chiefly in the uplands of the west and south. Coimbatore and Mysore are famous for their crops, as also Guzerat and Scinde. Another district is the Doab, or country between the Jumna and the Ganges; and it is also grown to a large extent in the valleys of the Godavery and Kistna. A great quantity of the cotton produce of India is consumed in the native manufactures, but there is still left an immense quantity for export. During the last twenty years the quantity shipped to England has more than doubled.

The cultivation of the **poppy**, from which opium is manufactured, is restricted, in British India, to the provinces of Benares and Behar, and is a Government monopoly. The cultivators cannot grow it without a licence; and when the crude opium is extracted they are compelled to sell it to the Government at a fixed rate. The drug is chiefly exported to China, and the Indian Government realises a profit of about £5,000,000 annually. In the native territory of Indore, on the plateau of Malwa, the poppy is also cultivated; but the manufacture of the opium is there carried on by private enterprise.

Indigo is an important article of commerce. It grows throughout the whole valley of the Ganges from Dacca to Delhi, but that grown in the lower part of the valley is the most highly prized. It is also cultivated to some extent at Candeish, in the Bombay Presidency. India supplies almost the whole of Europe with indigo.

The **Tea** plant thrives in Assam, and especially at Cahar and Silhet. The Assam plant has a stronger flavour than Chinese tea, and every year the amount imported into this country increases. Tea plantations are also found along the southern slopes of the Himalayas at Darjeeling, Kumaon, Gurwal, and in the Punjaub. **Coffee** is largely cultivated in southern parts of the Deccan. The **Chinchona** tree has been introduced into the Neilgherries, where it thrives as well as in its native habitat among the mountains of Peru.

Manufactures.—The best **cotton** goods are made at Masulipatam; diapers are produced at Dacca, and chintz at Calcutta and Burdwan. India is supplied, however, in a great measure with cottons from England, and the produce of the native manufacture is sent to Arabia, Persia, and the Indian Archipelago. The **silks** of Amritsir, Lahore, and Mooltan, in the Punjab, and of Moorshedabad, in Bengal, have long been celebrated. Embroidery, with gold and silver thread, is carried on at Dacca, in different parts of the Punjaub, and in Scinde. Trichinopoly is noted for its **trinkets**; Bangalore for its **carpets**; Cashmere for its **shawls.**

Cashmere shawls are made from the inner wool of the Thibet goat. When this wool is carefully sorted it is repeatedly washed, and it is thought that there is some peculiar property in the waters of Cashmere which enables the wool to take, in the process of dyeing, that softness and brilliancy of colour which cannot be obtained elsewhere. A shawl of the finest description will sometimes sell on the spot for £300. This includes, however, a heavy duty of £70 upon each shawl.

Commerce.—The commerce of British India is very considerable. It trades with Great Britain, China, the Indian Archipelago, Arabia, and Persia. An important trade is carried on with Central Asia by means of caravans, which traverse the Bolan and Khyber Passes. More recently it has been attempted to open a trade with Eastern Turkestan through the mountain passes of the north-west, but the great elevation of these passes renders trading very difficult. The chief exports to England are raw cotton, wool, hemp, jute, hides, silk—both raw and manufactured—indigo, teak, and saltpetre; besides rice, sugar, tea, coffee, pepper, oils, perfumes, and spices. Opium to the value of nearly £12,000,000 is annually sent to China. The total value of the exports amounted in 1872 to £64,600,000. The chief articles imported are manufactured goods from England; and ale, beer, books, and furniture for the English residents. The total value of British manufactures and produce imported by India in 1872, was about £18,000,000.

Internal Communication.—Means of internal communication are far from being perfect, as large tracts of country are covered with pathless jungle. But good roads have been constructed in various parts; and the navigation of the Indus, Godavery, and other streams have been improved by canals. But perhaps more important than both the roads and canals, are the various lines of railway now in process of construction, above 6000 miles of which have been already completed.

Railways.—From Calcutta a line of rail runs to Allahabad, whence one line branches north-west to Delhi, and another south-west to Jubbulpore. From Delhi a line is carried north and west to Lahore, and from Lahore, southward along the Sutlej to Mooltan. A line is also in progress from Lahore to Peshawar, in the Khyber Pass. There is also a line from Kurrachee to Kotree, on the Indus, which it is intended ultimately to connect with Mooltan. At present communication is kept up by means of a steam flotilla of flat-bottomed boats, which navigate this part of the river.

From Bombay a line runs north-east to Jubbulpore, where it meets a branch of the East Indian system. About midway between Bombay and

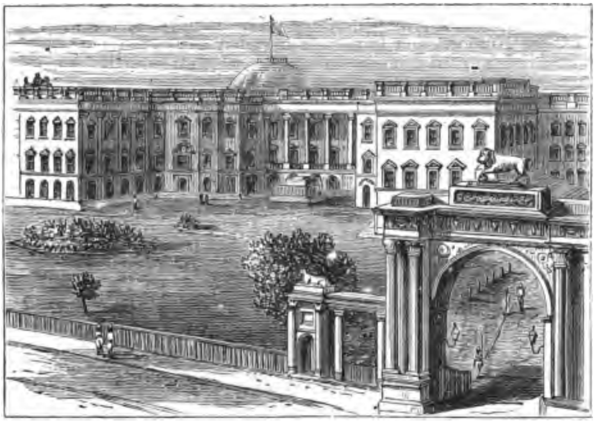
Jubbulpore, a line springs off and runs due east to Nagpore, and will ultimately be continued through Raipore across the peninsula. Another branch line runs north-west to Indore, the capital of Holkar's dominions. Two other main lines start from Bombay: one runs north through Surat, Baroda, and Amedabad, as far as the Gulf of Cutch; the other striking south-east by Poonah ultimately reaches Madras, receiving on its way a branch from Hyderabad.

From Madras a line is carried south-west, through Salem and Coimbatore, to Beypoor on the Malabar coast, with branches to Bangalore, in one direction; and to Trichinopoly, Tanjore, and Tuticorin in the other. It will be seen that large tracts still remain untouched by the engineer, but these will no doubt in a short time be opened up by railways. One project is to continue the branch to Indore as far as Ajmere, and to connect the latter with lines running to Delhi and Agra respectively.

The Overland Route.—India is now bound up so closely with English interests, that it is of the utmost importance that the journey to the East should be as short and expeditious as possible. Steamers belonging to the Peninsular and Oriental Company leave Southampton every week for the East Indies. The vessel first calls at Gibraltar, next at Malta, and then proceeds to Port Said, at the entrance of the Suez Canal. Proceeding through the canal the vessel reaches Suez, and then sailing down the Red Sea next stops at Aden. From Aden the steamer proceeds to Bombay, and the traveller bound for Calcutta or Madras will probably journey by rail, or he may continue his voyage to Point de Galle, in Ceylon, and thence to the ports on the Coromandel coast. The journey from Southampton to Calcutta may thus be made in a single vessel, without any change, and the time required is only about four weeks. Vessels belonging to other companies—some starting from London—can accomplish the journey in equal time. But if necessary the time may be considerably shortened. The traveller may proceed from London to Dover, and then cross to Calais. From Calais the journey is made by rail, through the Mont Cenis tunnel, to Brindisi, at the south-eastern extremity of Italy, whence a steamer proceeds to Alexandria and Port Said. Travellers may also, if they choose, proceed by rail from Alexandria to Suez. Thus the journey to India may be accomplished in three weeks, or even less time.

GOVERNMENT.—Only two small states retain their independence: Nepaul and Bhotan; and these lie among the valleys of the Himalayas. A large portion of India is still governed by native princes, who are under the protection of the British crown. The remainder, about three-fifths of the whole, are under the direct rule of England. The Queen is Empress of India. She is represented by the Viceroy, who is assisted in the government by a Council of five members, besides the Commander-in-chief. The Council superintends the entire administration of India, and the business is conducted by six separate departments—Financial, Home, Foreign, Military, Public Works, and the department of Agriculture, Revenue, and Commerce. Each department is under the charge of a secretary, and each is also the special care of a member of the Supreme Council, who has authority to deal with matters of routine and minor importance, and to select subjects of greater consequence for the consideration of the Viceroy and his Council. The Foreign department corresponds with the various political agents at the different courts of the protected princes. Bengal, Madras, and Bombay possess Councils of their own, and the Council of India therefore legislates for those provinces which have not local Councils, and deals with matters of exceptional importance affecting the Empire as a whole. The annual revenue of India is about £50,000,000.

British Provinces. — For purposes of administration, British India is divided into nine provinces: Bengal, the North-West Provinces, the Punjaub, Oude, the Central Provinces, British Burmah, Assam, Madras, and Bombay.



GOVERNMENT HOUSE, CALCUTTA.

Bengal extends along the valley of the Ganges from its mouth to the junction of the Gogra. It includes Bengal proper and Behar, as well as Chota Nagpore and Orissa. It embraces an area of 198,000 square miles, and has a population of 64,000,000, one-third of whom are Mohammedans. The administration of the province is carried on by a Lieutenant-Governor, who is assisted by a Council. Two-thirds of the population are agriculturists. The chief products of Bengal are opium, indigo, jute, and grain. The chief towns are Calcutta, Moorshedabad, Monghir, Patna, and Burdwan.

Calcutta, the capital of British India, is the second city in the British empire in point of population. The Hooghly, at the point where the town is built, is about a mile wide, and is crowded with shipping, though at a distance of one hundred miles from the sea. The population is about 800,000. **Patna**, next to Calcutta, is the largest town in the province. It has no manufactures of importance; but the neighbourhood yields large quantities of rice, opium, and saltpetre. **Burdwan**, which is connected with Calcutta by rail, stands in the midst of numerous coal mines.

The **North-West Provinces** were separated from Bengal in 1833, and now form a province under a Lieutenant-Governor of its own. It has an area of 80,000 square miles, and a population of 30,000,000, six-sevenths of whom are Hindoos. The chief towns are Allahabad, Benares, Cawnpore, Agra, and Hurdwar.

Allahabad, at the junction of the Ganges and Jumna, is the capital of the province; it is a strong military post. **Benares** is the most sacred city of the Hindoos, and is always crowded with pilgrims, priests, and mendicants. Viewed from the river, along which it extends for a distance of four miles, the city has a very fine appearance; the population has been estimated at 600,000. **Cawnpore** is painfully associated with the Indian mutiny and the name of Nana Sahib. **Agra**, on the Jumna, is noted for its temples and other public buildings, especially the mausoleum erected by Shan Jehan. **Hurdwar**, where the Ganges enters the Great Plain, is noted for its fairs and pilgrimages.

Oude is bounded on the north by Nepaul, and on the other three sides by the North-West Provinces. It has an area of 24,000 miles, and a population of 11,000,000. It was annexed by England in 1856, on account of the misgovernment of its rulers. It is now placed under a Chief Commissioner. The chief town is *Lucknow*, on the Goomtee, a feeder of the Ganges. Lucknow is famous for its siege during the Indian mutiny. Its population is about 300,000.

The **Punjaub** was annexed in 1848, after the second Sikh war. The country is well adapted for the growth of wheat, and there are extensive pastures. One of the most productive sources of revenue are its salt mines. It carries on also a great trade in Cashmere shawls, which only reach the rest of India and Europe through the Punjaub. The area is 103,750 square miles, and the population 17,600,000. It is under a Lieutenant-Governor. The chief towns are Lahore, Delhi, Amritsir, Mooltan, and Peshawar.

Lahore, the capital, stands on the Ravee. It contains some fine public buildings, but its streets are narrow and dirty. It is noted for its manufacture of silk shawls, which are embroidered with gold and silver thread. The population is about 100,000. **Amritsir** is a much more important place commercially. It is the principal seat of the Sikh religion, and contains the famous Amretsir, or *Pool of Immortality*, from which the town is named. Immersion in the pool is believed by the Sikhs, and many other tribes of Hindoos, to purify from all sin. **Delhi**, on the Jumna, was the ancient capital of the Mogul empire. Its population is said at one time to have amounted to 2,000,000; at present it is about 100,000.

The province of **Bombay**, which includes Scinde, stretches along the western coast of Hindostan for a distance of 1050 miles. It also includes within its limits about a dozen native states, the largest of which are Guzerat and Baroda. The total area is about 200,000 square miles, of which the native states comprise one-third; the population exceeds 16,000,000. The chief products of the province are salt and cotton. The chief towns are Bombay, Poonah, Surat, and Kurrachee.

BOMBAY.

Bombay, on an island of the same name, possesses the finest harbour in Hindostan. It is perhaps the greatest commercial city in India, and it has a population of 650,000. The Parsees, who are of Persian extraction, are more numerous here than in any other town in Hindostan, and they form a wealthy and influential part of the population. **Poonah**, which stands at an elevation of 2000 ft., is famed for its salubrity; and is an important military station. **Surat** was formerly a place of considerable commercial importance, but its trade has been transferred to Bombay. An English factory, the first in India, was established here in 1612. **Kurrachee** has the only safe port in Scinde.

The province of **Madras** includes all the coast district from the Chilka Lake to Cape Comorin, and also the district of Canara on the Malabar coast. Its coast-line is 1730 miles in length, and yet it possesses not a single good harbour. Like Bombay and Bengal it has a local Council, as well as a Lieutenant-Governor. The chief towns are Madras, Masulipatam, Tanjore, Trichinopoly, Tinnavelly, Coimbatore, Beypoor.

Madras, though a place of considerable trade, is totally destitute of a natural harbour. Ships anchor in the roadstead in front of the town, and land passengers and goods by means of light boats called "catamarans." An artificial harbour is now in process of construction, the foundation stone of a gigantic pier having been laid by the Prince of Wales at his recent visit.

Masulipatam, on a branch of the Kistna, is celebrated for its manufacture of chintzes, most of which are sent to Persia. **Tanjore** contains a famous pagoda, one of the triumphs of Hindoo architecture. **Trichinopoly** is celebrated for its manufacture of chains and jewellery. **Tinnavelly** and **Coimbatore** stand in the midst of rich cotton districts. **Beypoor** has extensive iron-works.

The **Central Provinces** form a district which was taken from Madras and the North-west Provinces in 1861, and placed under a Chief-Commissioner. The area is 85,000 square miles, and the population 8,000,000; only about one-fourth of the land is cultivated. The railway from Bombay to Calcutta passes right through the district, and will, no doubt, in time work a great change. The chief product is cotton. *Nagpore*, *Jubbulpore*, and *Raipore* are the chief towns. Jubbulpore has risen into importance since the construction of the railway from Calcutta; it is said that the traffic which passes through it is larger than that of any city in India, except Bombay.

Assam, formerly included in Bengal, was made into a separate province in 1874, and is now under a Chief-Commissioner. Its area is 52,000 square miles, and its population 3,000,000. Cachar and Silhet are the most important tea producing districts in India. Rice also is grown in considerable quantities. *Goalpara* is the seat of Government.

British Burmah includes Aracan, Pegu, and the Tenasserim provinces. The total area is 88,000 square miles, and the population about 3,000,000; so that this province is the most thinly populated district in British India. The province is rich in minerals, including gold, iron, copper, and tin; the soil is fertile, and the climate, especially in the

Tenasserim provinces, very healthy. Rice, cotton, and indigo are the chief products; but the sugar-cane, coffee-plant, and various spices grow freely. The great drawback to the prosperity of the province is want of roads. The chief towns are *Rangoon*, on the delta of the Irrawady; Bassein, Martaban, Amherst, Mergui, and Tenasserim.

PROTECTED STATES.—About two-fifths of Hindostan are under native rulers, who are virtually independent so long as they rule properly; but attached to each court is a British resident, who not only looks after British interests, but occasionally interferes on behalf of oppressed subjects. Only a short time ago (1875) the Gaikwar of Baroda, a Mahratta prince, was deposed by the Viceroy of India on account of misgovernment. A certain number of native states are included among the non-regulation districts of Bengal, the Punjaub, Bombay, and Madras. In addition to these, the chief protected states are Mysore, the Nizam's dominions, the Indore agency, the states of Rajpootana, and Cashmere.

Mysore is a table-land, with an area of about 27,000 square miles. It is surrounded by the province of Madras on every side except on the north-west, where it touches Bombay territory. Owing to the misgovernment of the late Maharajah a Chief-Commissioner was appointed in 1834 to administer affairs, and the state will continue under British government until the present young prince comes of age. Mysore, with a small adjacent state called **Coorg**, on the west, forms the great *Coffee* district of India. The population is about 4,000,000. The chief towns are *Mysore*, the capital, Seringapatam, and Bangalore.

Seringapatam, the former capital, was stormed by the **English** in 1799, when Tippoo Sahib was killed. **Bangalore**, which stands at an elevation of 3000 ft., is a healthy place, with an agreeable climate.

The **Nizam's Dominions** extend from the Tongabudra in the south, to the Pain Gunga in the north; and embrace an area of 80,000 square miles. The present Nizam is a delicate boy of about ten years, and the government is carried on by a regency, at the head of which is Sir Salar Jung, an able minister. **Berar**, a district lying to the north, with an area of 18,000 square miles, really forms part of the Nizam's territory, but it was placed in the hands of the British Government in 1853 as payment of certain arrears due to the English. It produces excellent cotton. The district is under the charge of the British Resident at Hyderabad, and the surplus revenue, after payment of expenses of administration, is paid to the Nizam. The population is about 8,000,000. The chief towns are *Hyderabad*, the capital, on a feeder of the Kistna; Golconda, about three miles to the west, and Ellora.

Golconda was formerly noted as a depot for diamonds, which were brought to it from other districts to be polished and prepared for sale: there are no diamond mines in its vicinity. **Ellora**, near the north-western extremity of the Nizam's dominions, is famous for its cave-temples, which surpass all similar structures in India. One of these temples is a pagoda 100 ft. in height, surrounded by five chapels nearly similar in form; the whole, including the area on which they stand, being excavated from the solid rock, and covered with sculptures from top to bottom, both within and without.

The states belonging to the **Indore Agency** lie between the Aravulli and Vindhya Mountains, and include *Gwalior* or Scindia's dominions, *Indore* or Holkar's territory, and the *Bundelcund* states. There are altogether 71 states, and they comprise an area of 80,000 square miles.

Rajpootana, which extends from the Chumbul to the Indus, has an area of about 123,000 square miles, and a population of eight and a half millions. It consists of eighteen principalities. The Rajpoots are Hindoos of the military class, who offered a vigorous resistance to the Mohammedan conquest of India, but were decisively defeated by Sultan Baber, near Agra, in 1527.

Cashmere is an extensive territory extending from the Punjaub to the Karakoram Mountains. The country is well watered, the scenery beautiful, and the climate agreeable. The chief wealth of the country is derived from its shawl manufacture. The Thibet goat, from which the wool is obtained, inhabits districts from 14,000 to 16,000 feet in elevation. The great mart for the shawl wool is Kilghet, in the neighbourhood of the Karakoram Pass, whence it is conveyed to the town of Cashmere on the backs of mountain sheep. The people are of Hindoo origin, but are followers of Mahomet. The governor of Cashmere is called the Maharajah. The chief towns are Cashmere, Jamoo, and Leh.

Cashmere, or Srinagur, the capital, stands on the banks of the Jhelum, at an elevation of 6300 ft. A small lake lying on the north-east side of the city has been much celebrated for its natural and acquired beauties. **Jamoo**, on an affluent of the Chenaub, is the residence of the Maharajah.

Leh, the chief town in Western Thibet, is now included in Cashmere. It stands near the banks of the Indus, at an elevation of 11,000 ft.

INDEPENDENT STATES.—The only independent states are Nepaul and Bhotan; but even these pay a certain allegiance to the British Government, and they would not be permitted to form any alliance, or pursue any line of conduct deemed injurious to British interests.

Nepaul extends along the Himalayas for a distance of 500 miles. The surface is of course very various. Commencing with the swampy belt of the Terai, it gradually rises in elevation until it reaches the borders of Thibet, and it includes the highest summits in the whole chain. It abounds with forests of valuable wood, and in the high mountain valleys rice, maize, wheat, and other grains are raised; and oranges and pine-apples ripen. Wild animals are numerous, and the woods abound with rare birds, of beautiful plumage and large size. Pasturage is scarce, but large flocks of sheep are reared, some of which yield a considerable quantity of milk. The manufactures are of no importance, but there is considerable trade with Thibet and China on the one hand, and India on the other. The people are of Mongolian origin, mixed with Hindoo blood, and the prevailing religion is Brahminism. *Khatmandoo*, the capital, stands at an elevation of 4780 ft., and is a clean, well-built city, with a population of about 30,000.

Bhotan, separated from Nepaul by the district of Sikkim, resembles the former in surface, climate, and productions. The people are a hardy robust race, and peaceably inclined. Their chief manufacture is a kind of paper made from the bark of a tree. The religion is Bhuddism. *Tassisudon* is the capital.

FOREIGN POSSESSIONS.—The French and Portuguese have still some small possessions in Hindostan. The **French** possess Chandernagore on the Hooghly, to the north of Calcutta; Yanaon, on the delta of the Godavery; Caricall, at the mouth of the Cauvery; Pondicherry, a little further north; and Mahe, on the Malabar coast.

The **Portuguese** possess Goa with a large adjacent territory on the west coast; Daman, on the eastern side of the Gulf of Cambay; and Diu Island, off the southern extremity of the Kattiwar Peninsula.

STRAITS SETTLEMENTS.

Under the title of Straits Settlements are included certain British possessions in the Straits of Malacca, between the Malay Peninsula and the island of Sumatra. These settlements are Penang, Malacca, and Singapore.

Penang, or Prince of Wales Island, is situated at the entrance of the Strait, but near the coast of Malaya. It is 14 miles long by 9 broad, and has a population of about 60,000. The climate is healthy, the soil fertile; and certain spices, especially cloves and nutmegs, are very abundant and of excellent quality. It is also well adapted to the growth of the sugar-cane and tapioca. *George Town*, the capital, stands on the eastern side of the island.

Wellesley Province, on the mainland, separated from Penang by a channel two miles in width, is a dependency of Penang. It extends along the coast for a distance of about 40 miles between the rivers Mooda and Carrian, and has a population of about 70,000. To the south of Wellesley province is Perak, where the English Resident, Mr. Birch, was murdered a short time ago (1875).

Malacca, an extensive territory having an area of nearly 1000 square miles, lies on the south-west side of the Malay Peninsula. The shores are rocky, the interior mountainous, the climate healthy, and the soil fertile. It was originally a Portuguese settlement; it afterwards came into the hands of the Dutch, and in 1824 was received by Britain in exchange for Bencoolin, in Sumatra. It was at one time a place of great trade, but its importance has declined since the rise of Singapore. The population is about 78,000, the greater part of whom are Malays; but the Chinese colonists include some of the most wealthy merchants in the Straits. *Malacca*, the capital, has a population of about 12,000.

Singapore is an island situated at the southern extremity of the Malay Peninsula, from which it is separated by a channel three quarters of a mile in width. Its length is about 27 miles, and breadth 11, and it comprises an area of 275 square miles. The surface is undulating, and covered with considerable stretches of jungle; the climate is hot, but healthy, and the soil well adapted to the growth of spices.

The town of **Singapore** stands near the southern extremity of the island, and is divided into three parts, inhabited by Malays, Chinese, and Europeans respectively. It is a place of great and increasing trade, and is a port of call for vessels proceeding from India to China or Australia. The population of the whole settlement is about 100,000. The island was taken possession of by Sir Stamford Raffles in 1818.

Singapore is the seat of government for the Straits Settlements. The government consists of a Governor, assisted by an Executive Council of nine members, and a Legislative Council of ten members nominated by the Crown. The Lieutenant-Governors of Penang and Malacca have seats in both Councils. The exports from the Straits Settlements consist of gutta-percha, gambier (a vegetable product used in tanning), black pepper, india-rubber, buffalo horns, canes, sugar, rice, and opium.

LABUAN.

Labuan is a small island about six miles from the north-west coast of the island of Borneo. It has an area of 45 square miles, and a population of nearly 5000. It was ceded to Great Britain in 1847, being at that time uninhabited, and a British settlement was established in the following year. Excellent coal is found in the north-east of the island, and is shipped to Singapore. On the south-east is an inlet called *Victoria Harbour*, which is well sheltered, and affords good anchorage. There is a Governor and Legislative Council. The bishopric of Labuan includes the Straits Settlements. On the coast of Borneo is the small province of *Sarawak*, which was granted to the late Sir James Brooke, first governor of Labuan. It has not been adopted by the British Government, but is under its protection. The town of *Sarawak* has a population of 12,000.

HONG-KONG.

Hong-Kong is a small island at the mouth of the Canton river. It has an area of about 30 square miles, with a population of 124,000. On the north side of the island, and situated on a splendid bay, is the town of *Victoria*, which contains about one-third of the total inhabitants. The situation of the town is described as exceedingly beautiful, being surrounded by hills between 2000 and 3000 ft. high. As a military and naval station Hong-Kong is of great importance; and is the centre of great trade in opium, betel nuts, sandal wood, English manufactured goods, rice, tea, and silks. It has a Governor, and both a Legislative and an Executive Council.

The island is separated from the mainland by a narrow channel, and the opposite peninsula of **Kowloon**, together with the small **Lema Islands**, was ceded to Britain in 1861.

INDO-CHINESE PENINSULA.

PHYSICAL CHARACTER.—Indo-China, or Further India, as it is sometimes called, embraces the eastern peninsula on the south coast of Asia. It is bounded on the north by China and Thibet; on the west by the Bay of Bengal, and on the south and east by the China Sea: the total area is estimated at nearly 1,000,000 square miles. Where the Sanpoo breaks through the Himalayas it is only separated from the valley of the Yang-tse-kiang by a single mountain knot. From this point, however, various mountain ranges spread out like the spokes of a fan and separate the basins of the different rivers. These ranges are known as the mountains of Aracan, Siam, Cambodia, and Anam, respectively. In the north they appear to be of considerable elevation, but they decrease in height towards the south, and become little more than hills. One range runs through the peninsula of Malaya, with a height averaging from 3000 to 4000 ft. All these mountains are rich in ores of gold, silver, and tin; and precious stones, such as rubies and sapphires, are met with. The chief rivers are the Irrawady, Saluen, Menam, Mekon, and Sankoi.

The **Irrawady** rises in Eastern Thibet and flows southward past Bhamo, Mandalay, and Ava. The river valley, which has hitherto been hemmed in by mountains, now spreads out into a rich plain, and the river itself is in some places four miles wide. It is joined on the right by the Kyan Duayn, and continuing its course southward it forms a delta, which covers an area of 10,000 square miles. The total length of the Irrawady is about 1000 miles, and it is navigable as far as Bhamo, about 800 miles from the sea. The **Mekon**, the largest river in Further India, rises in Thibet and traverses the Chinese province of Yunnan. It empties itself by a large delta which projects far into the ocean. Its total length is uncertain.

The climate is tropical, but is tempered by the monsoons and sea breezes. Singapore, though close to the equator, has a lower mean annual temperature than either Calcutta or Madras, and the difference between the mean summer and mean winter temperature is little more than two degrees. Extensive forests, on all the hill ranges, supply valuable timber, including teak, eagle-wood, iron-wood, ebony, and sandal-wood. Cinnamon grows in Cochin-China; and among other native productions are the betel-palm, gamboge, and numerous aromatic and medicinal plants. Most of the wild animals met with in Hindostan are found in Further India; such as the elephant, rhinoceros, tiger, leopard, and large numbers of monkeys, deer, and antelopes. The lion, hyena, jackal, wolf, and fox, however, are not found in Further India.

A white, or more properly cream-coloured, variety of the **elephant** is occasionally met with in Burmah and Siam, and is highly valued. One of the titles of the King of Siam is "Lord of the White Elephant." He who discovers one of these animals in a wild state is considered the most fortunate of men. He is rewarded with a crown of silver, his family is exempt from taxation and all kinds of servitude for three generations; and the event constitutes an era in the annals of the nation.

PEOPLE AND INDUSTRY.—The total population of Indo-China is estimated at 22,000,000. The country includes several independent states, the chief of which are Burmah, Siam, and Anam. In the interior are several semi-independent tribes called the *Laos* or *Shans*. In the extreme south are the Malay states, many of which are under native rajahs. The people of these states belong to the *Malay race;* in other parts of the peninsula the inhabitants belong to the Mongolian family, and their language resembles that of the Chinese. The native governments are generally of the most despotic character. The nobles usually hold their lands upon a tenure of military service, while the great mass of the people are in a state of slavery. The prevailing religion is Buddhism.

Agriculture forms the chief employment of the people, but it is but imperfectly understood. *Rice* is the common object of cultivation and the chief article of food. The sugar-cane, cotton plant, and mulberry, are also cultivated, as well as indigo and tobacco.

The manufactures include silk and cotton fabrics, gilding, casting bells, and the making of a coarse kind of earthenware. There are some metal works and manufactures of leather in Siam, and a little shipbuilding in Cochin-China. The trade is chiefly with China, Great Britain, and British India, by sea; and with China and Thibet by land. *Bhamo,* on the Irrawady, is a great centre of inland trade. The chief exports are raw cotton, feathers, pepper, sugar, areca nuts, eagle or aquila wood (used as incense in China), ebony and other fancy woods, ivory, birds-nests, rice, and metals. The inland communication is chiefly by means of rivers.

DIVISIONS AND TOWNS.—The following is a table of the chief states in Indo-China—exclusive of the possessions belonging to Great Britain—with the estimated population and the chief towns in each state :—

STATES.	POPULATION.	TOWNS.
Burmah, ...	4,009,000.	Mandalay, Bhamo.
Siam, ...	6,000,000.	Bangkok.
Anam, ...	10,500,000.	Huè, Kesho, Saigon.
Cambodia, ...	890,000.	Udong, Kampot.
Laos Country, ...	....	Louang Prabang.
Malaya, ...	209,000.	Perak.

Burmah, which formerly extended to the sea-coast, is now an inland country and occupies the upper basius of the Irrawady and Saluen; and a semi-independent region of the empire stretches across the Mekon to the borders of Anam. Burmah possesses great mineral wealth, including gold, silver, iron, coal, marble, and amber. The forests supply valuable timber, and the rich soil of the river valleys will bear three crops of grain in a year. The Buddhist religion is here preserved in great purity, and temples and monasteries are numerous. *Mandalay*, the present capital, stands near the left bank of the Irrawady, a few miles north of Amarapoora, which was once the capital. *Amarapoora* was the capital previous to 1819, when the seat of government was transferred to Ava: it is now in ruins. *Ava* was destroyed by an earthquake in 1839. *Bhamo*, on the Irrawady, is only about 40 miles from the frontier of China, and is connected by three principal routes with Tali-foo in Yunnan.

Siam is an extensive kingdom, at the head of the Gulf of Siam and stretching inland almost to the source of the Menam. It also includes the upper portion of the Malay peninsula, and the total area is estimated at 309,000 square miles. The soil is of great fertility, and the products include teak, rose, sandal, and aquila woods; rice, sugar, coffee, sago, gums, drugs, and dye-woods. The principal manufactures are vases, urns, and other vessels, in the making of which gold is embossed upon silver; gold-beating, iron-founding, and pottery. The government is an absolute monarchy, and there are two kings—the first is the actual monarch, and the second is the nominal head of the army. The chief centre of trade is *Bangkok*, the capital. The town stands about 20 miles above the mouth of the Menam, and has a population of about 260,000, nearly one-half of whom are Chinese. Most of the houses are built of wood, and floating rafts, each containing from ten to twelve houses, line the sides of the river.

The kingdom of **Anam** includes the provinces of Tonquin and Cochin-China. The productions are similar to those of Burmah and Siam, with the addition of *cinnamon*, which grows only in Ceylon and Cochin-China; silk is produced in large quantities in Tonquin. The manufactures are of littlei mportance except *shipbuilding*, in which the people of Cochin-China excel. The inhabitants who dwell on the eastern slope of the mountains, which bound the basin of the Mekon, are allied to the Chinese, but the interior slope of the country is inhabited by savage nomadic tribes, who are in a state of semi-independence. *Hue*, the capital of the empire, is situated on a river of that name which flows into the Gulf of Tonquin; it has a population of about 50,000. *Kesho*, on the Sankoi, the capital of Tonquin, has double that population. *Saigon*, on a branch of the delta of the Mekon, is a French settlement. The tract of country to which it belongs was conquered by France in 1861, and is called *French Cochin-China.*

Cambodia, once a powerful kingdom, has been reduced to its present dimensions—about 30,000 square miles—by the encroachments of Anam and Siam. The country is flat, and for the most part covered with forests. On the borders of Cambodia and Siam is the lake *Talé sap*, or Biento; it is about 100 miles in length, and abounds in fish. A stream called the Me-sap flows from the lake and joins the Mekon. *Udong*, the present capital, lies about four miles from the Me-sap, and is a wretched collection of thatched houses. About 120 miles to the south-west stands *Kampot*, which has a capital harbour and considerable trade.

The **Laos** or *Shan* tribes occupy the interior of the country. Some of the tribes are subject to China, others to Burmah, Siam, and Anam, but many retain their independence. A great portion of the country is mountainous, and is rich in gold, silver, copper, and iron, all of which are exported to China. Rice is the chief article of cultivation, and the silk-worm is reared to some extent. *Lonang Prabang*, on the Mekon, is the capital of the most northerly of the Shan states tributary to Siam. It is a pleasantly situated town with a population of about 8000.

The independent **Malay** states occupy the southern portion of the Malay peninsula. Forest and jungle, stocked with wild animals, cover the greater part of the country. Minerals are abundant, and *tin* is an important article of export. Each of the independent states is under its own rajah or sultan, and the more powerful of these states are *Perak* and *Salangore*, on the west side; and *Pahang* and *Johore* on the east. The Malays are expert navigators; large numbers of them are employed as sailors in the Eastern Seas, and many are engaged in piracy. The inhabitants of Perak and Salangore are followers of Mahomet.

EAST INDIAN ARCHIPELAGO.

PHYSICAL CHARACTER.—The East Indian Archipelago embraces all those islands and groups which lie between Asia, on the one hand, and New Guinea and Australia on the other; and which extend from the Philippine Island, on the north, to Java on the south. The entire archipelago has an area of about 800,000 square miles, with a population which has been estimated at 30,000,000. The whole of the region is volcanic, the islands are generally mountainous, the climate tropical, and the soil fertile.

A shallow sea, seldom exceeding 40 fathoms in depth, separates the larger islands from each other and from the continent of Asia. A line of 100 fathoms would include the small island of Bali, lying immediately east of Java, and also the Philippine Islands; but it would exclude Lombock, the island next to Bali and only five miles distant, as well as the Celebes. This line divides the archipelago into two parts with respect to its animal and vegetable productions. West of that line the productions, of what is called the **Indo-Malay** region, resemble those of south-eastern Asia; to the east the productions of the **Austro-Malay** region resemble those of Australia and New Guinea.

The Indo-Malay region is the proper home of those wonderful orchids called *pitcher plants;* palms also are more abundant here than in any other part of the world. Borneo and the adjacent islands form the region of the *camphor tree,* and here also, as well as at Singapore, the *gutta percha tree* is met with. The *spices,* for which the archipelago is famous, grow chiefly in the eastern portion—in the Moluccas and Banda Islands. The animals resemble those of Hindostan, but the *orang-outang* is found only in the forests of Borneo and Sumatra. The island of Celebes seems to mark the meeting of the Indo and Australian races of animals. Its shores mark the farthest eastward range of the squirrel within the tropics; and the farthest western range of the marsupial or pouched animals.

POPULATION AND INDUSTRY.—The inhabitants belong to two distinct races: the Malays and Papuans. The *Malays* occupy all the larger islands together with the Celebes and Moluccas. The *Papuans,* whose home is New Guinea, are more or less intermixed with the Malays in the islands to the east of the Moluccas. The inhabitants of the greater part of the archipelago are Mohammedans; the Chinese settlers, who are very numerous in some parts, are Buddhists, and most of the inhabitants of the Philippines have been converted to Christianity.

Agriculture is the chief occupation of the people, and the produce of the larger islands include rice, sugar, coffee, cotton, tobacco, and indigo; in the smaller islands, spices and aromatics chiefly. *Rice* is the chief food plant, except in Celebes and some of the adjacent islands, where *sago* is largely consumed. The manufactures are not important, but the Malay nations display great skill in jewellery and in ornamental cabinet work. The commerce is very considerable, and is chiefly in the hands of the Chinese, English, and Dutch.

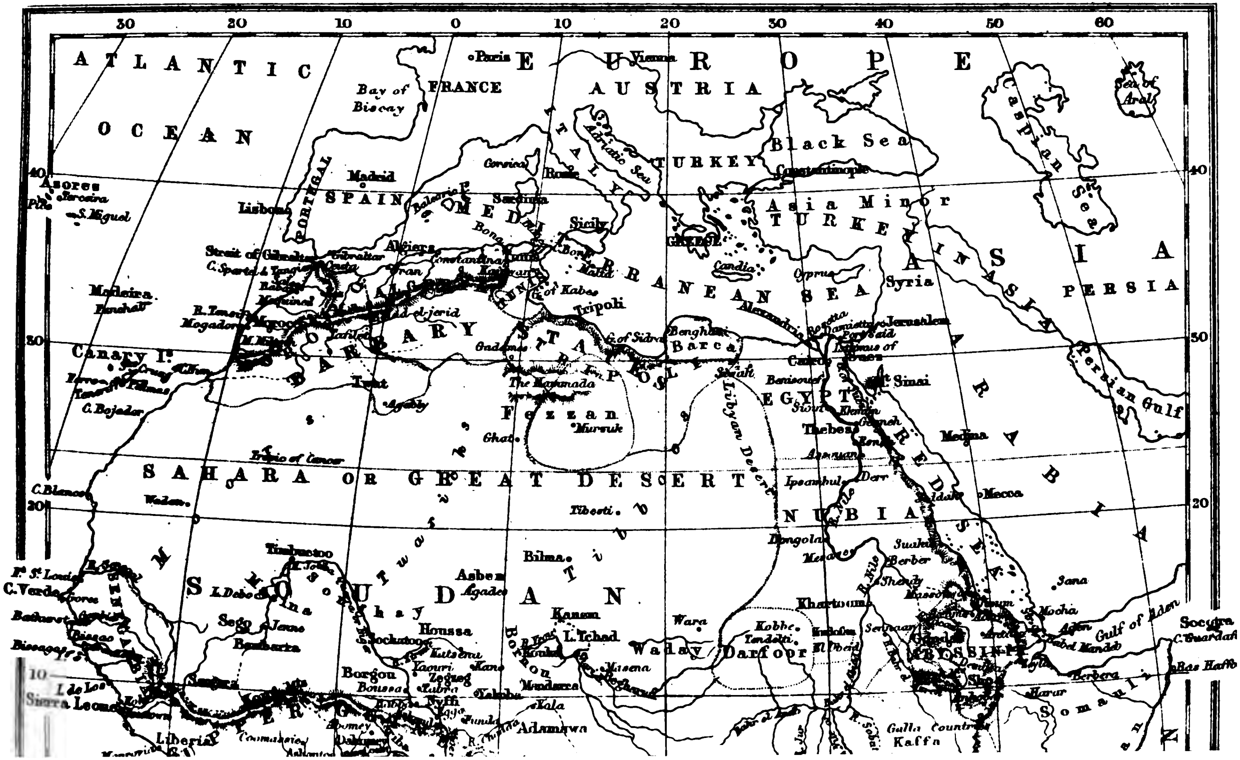
ISLANDS AND TOWNS.—The **Philippine Islands,** the most northerly group in the archipelago, consist of a number of islands, the largest of which is Luzon, which has an area of 43,000 square miles. Spain possesses the west coast of this island and portions of some of the others. *Manilla*, the chief settlement, is a regularly built town with a population of about 150,000. There are some extensive manufactures, particularly those of cheroots. The trade is chiefly in the hands of British, American, and Chinese merchants; and the chief exports are rice, sugar, cigars, sapan-wood (used in dyeing), hemp and cordage, coffee, indigo, tortoise-shell, mother-of-pearl, and other articles.

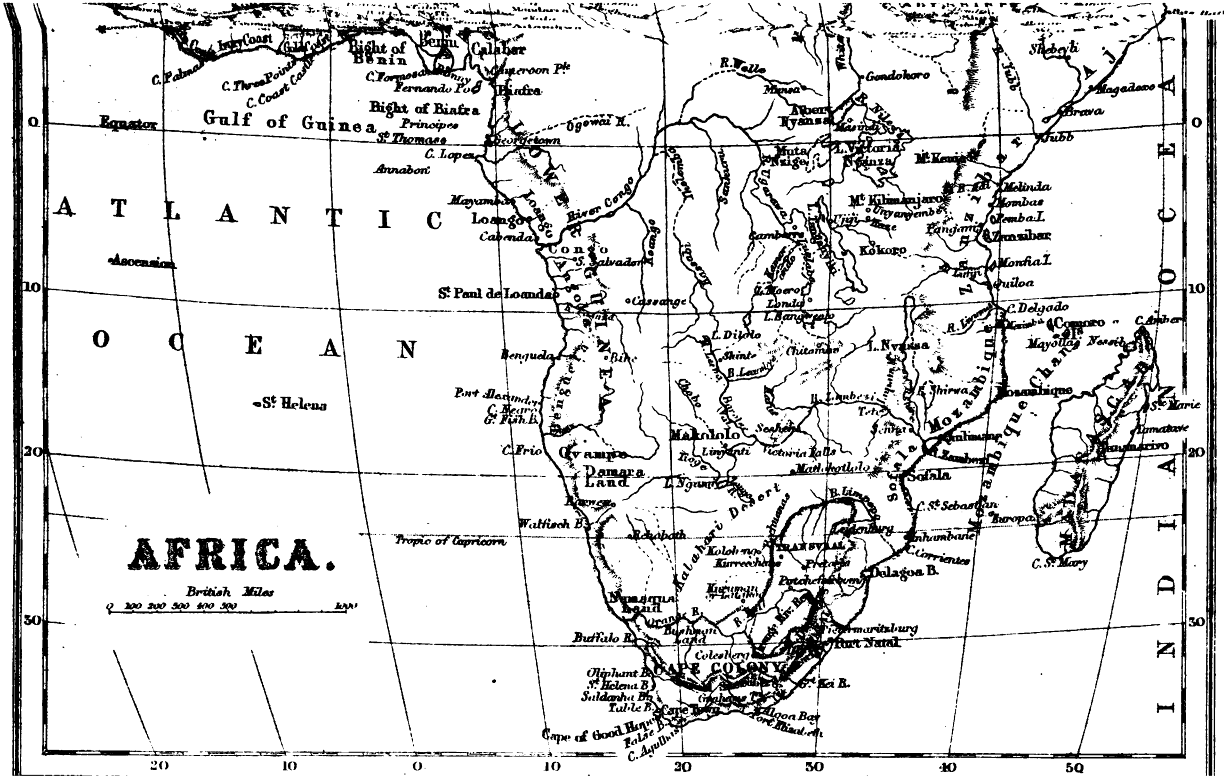
Borneo, the largest island in the world, has an area of 290,000 square miles, and a population of nearly 2,000,000, chiefly Malays and Chinese. The Dyaks, a Malay race, are the most numerous in the island and are only half civilised. The equator divides it into two almost equal portions. The interior is believed to be mountainous, and near the north-eastern extremity of the island is the peak of *Kinabalow*, 13,600 ft. in height. About two-thirds of the island is under Dutch influence. *Sarawak*, a district extending along the west coast, was ceded by the Sultan of Borneo to the late Sir James Brooke, and his nephew is the present rajah. This district includes the towns of *Sarawak* and *Borneo*. The chief Dutch settlements are *Sambas* and *Pontiana*. The principal exports are sago, bees' wax, edible bird-nests, camphor, india-rubber, gutta-percha, gold, diamonds, rattan canes, antimony, quicksilver, tortoise-shell, and other articles.

Sumatra is separated from the continent by the Strait of Malacca. It is about 1000 miles in length, and has an area of 150,000 square miles; the equator almost bisects it. The Dutch claim the whole of the mainland south of 3° north, as well as the adjacent islets. The northern portion of the island is inhabited by the independent kingdom of Achin. *Padang*, on the west coast, is the capital of the Dutch possessions; further south is *Bencoolen*, which exports large quantities of pepper. **Banca**, a small island off the east coast, contains valuable *tin* mines, which are worked by Chinese under Dutch superintendence. The population of Sumatra is about three and half millions.

Java, the most valuable of the Dutch possessions in the East Indies, is separated from Sumatra by the Straits of Sunda. It has an area of 50,000 square miles, with a population of 18,000. The whole island is intensely volcanic, and the celebrated *Upas* or *Poison Valley* is the crater of an extinct volcano. The minerals are not of much importance, but the vegetation is very luxuriant. The chief exports are coffee, sugar, cloves, indigo, rice, and tobacco. *Batavia*, the chief town, is the capital of Dutch possessions in the East; it has a population of about 250,000. The islands which stretch eastward to Timor are all more or less under Dutch influence, which extends to the western parts of New Guinea.

Celebes, an island of remarkable form, to the east of Borneo, is the fourth in size of the East India Islands. It is very fertile, and the exports include gold, rice, ebony, tortoise-shell, spices, and oil. It is inhabited by several independent nations, but the Dutch possess the settlement of *Macassar* on the south-west coast. The **Moluccas**, or *Spice Islands*, lie to the east and also belong to the Dutch. The islands yield valuable timber, as well as coal and gold, but they are especially valuable for their spices—cloves, nutmegs, and mace. *Amboyna* is the chief settlement, and ranks next to Batavia as a station of Dutch commerce in the East.


ATLANTIC OCEAN
EUROPE
FRANCE
Paris
Bay of Biscay
SPAIN
Madrid
PORTUGAL
Lisbon
AUSTRIA
Vienna
ITALY
Adriatic Sea
Rome
Corsica
Sardinia
Sicily
TURKEY
Black Sea
Constantinople
Asia Minor
Caspian Sea
Sea of Aral
ASIA
PERSIA
Persian Gulf
Syria
Jerusalem
Cyprus
Candia
GREECE
MEDITERRANEAN SEA
Azores
S. Miguel
Madeira
Canary Is.
C. Bojador
C. Blanco
Strait of Gibraltar
Gibraltar
Algiers
Tunis
Tripoli
Barca
Benghazi
G. of Sidra
G. of Kabes
BARBARY
Gadames
Fezzan
Murzuk
The Hamada
Ghat
Tuat
Alexandria
Rosetta
Damietta
Port Said
Isthmus of Suez
Cairo
Sinai
EGYPT
Siwah
Beniesouef
Thebes
Assouan
Ipsambul
Libyan Desert
SAHARA OR GREAT DESERT
Tropic of Cancer
Tibesti
NUBIA
Dongola
RED SEA
Medina
Mecca
ARABIA
Sana
Mocha
Aden
Gulf of Aden
Socotra
C. Guardafui
Ras Hafun
Berbera
Harar
Somali
ABYSSINIA
Galla Country
Kaffa
Khartoum
Berber
Shendy
R. Nile
Kobbe
Darfoor
Waday
Wara
L. Tchad
Kanem
Bilma
Asben
Agades
Bornou
Mandara
Houssa
Kano
Borgou
Boussa
Adamawa
SOUDAN
Timbuctoo
Sego
Bambarra
L. Debo
C. Verde
Sierra Leone
Liberia
I. de Los
30
20
10
0
40
50
60


AFRICA.
British Miles
0 100 200 300 400 500 1000
ATLANTIC OCEAN
INDIAN OCEAN
Gulf of Guinea
Bight of Benin
Bight of Biafra
Equator
Tropic of Capricorn
Ascension
St. Helena
St. Thomas
Principe
Fernando Po
Annabon
C. Palmas
Ivory Coast
C. Three Points
C. Coast Castle
Benin
Calabar
Cameroon Pk
Biafra
Georgetown
C. Lopez
Ogowai R.
Mayumba
Loango
Cabenda
River Congo
Congo
S. Salvador
St. Paul de Loanda
Cassange
Benguela
Bihe
C. Negro
G. Fish B.
C. Frio
Damara Land
Walfisch B.
Rehoboth
Kalahari Desert
Makololo
Linyanti
Victoria Falls
L. Ngami
Chobe
L. Dilolo
L. Bangweolo
Kokoro
L. Nyassa
Tete
Mozambique
Mozambique Channel
Sofala
Quilimane
C. St. Sebastian
Inhambane
C. Corrientes
Delagoa B.
Transvaal
Pretoria
Potchefstroom
Lydenburg
Kuruman
Namaqua Land
Buffalo R.
Bushman Land
Colesberg
Orange R.
Cape Colony
Pietermaritzburg
Port Natal
Gt. Kei R.
Algoa Bay
Port Elizabeth
Cape Town
Table B.
Saldanha B.
St. Helena B.
Oliphant R.
Cape of Good Hope
False B.
C. Agulhas
R. Welle
Gondokoro
Albert Nyansa
L. Victoria Nyanza
Muta Nzige
Mt. Kenia
Mt. Kilimanjaro
Unyanyembe
Ujiji
Tanganyika
Zanzibar
Pemba I.
Mombas
Melinda
Monfia I.
Quiloa
C. Delgado
Comoro Is.
Mayotta
Nossibe
C. Amber
Ste. Marie
Tamatave
Tananarivo
C. St. Mary
Europa
Magadoxo
Brava
Jubb
Shebeyli
Madagascar

AFRICA.

GENERAL DESCRIPTION.

Boundaries and Extent.—Africa is separated from Europe by the Mediterranean, and is connected to Asia by the Isthmus of Suez, which is only 73 miles across. On the west it is bounded by the Atlantic, on the east by the Indian Ocean and the Red Sea. From Cape Blanco, on the Mediterranean, to Cape Agulhas it measures 5000 miles; and its breadth, from Cape Verde to Cape Guardafui, is nearly as much. The total area is 12,000,000 square miles.

Cape Blanco, or Ras-el-Abiad, is in lat. 37° 21′ North; Cape Agulhas is 34° 50′ South of the equator. Cape Verde is 17° 40′ West of Greenwich, and Cape Guardafui is 51° 10′ East longitude. The Strait of Gibraltar, which separates Europe and Africa, is only ten miles wide in its narrowest part; and the Strait of Bab-el-Mandeb, between Africa and Asia, is only about 17 miles wide.

Countries.—The principal states of Africa lie round the margin of the Continent, but the tribes of the interior are gradually being brought under the influence of civilization. The chief countries, with the area, population, and capital of each, are given in the following table:—

Countries.	Area in Sq. Miles.	Population.	Capital.
Morocco, - - - -	260,000	8,000,000	Fez.
Algeria, - - -	250,000	3,000,000	Algiers.
Tunis, - - - -	45,700	2,000,000	Tunis.
Tripoli, - - -	350,000	1,500,000	Tripoli.
Egypt, - - - -	1,000,000	12,000,000	Cairo.
Abyssinia, - - -	160,000	3,000,000	Gondar.
Sahara, - - -	1,000,000	4,000,000	Agades.
Soudan, - - -	2,800,000	10,000,000	Timbuctoo.
Senegambia, - -	250,000	5,000,000	Bathurst.
Upper Guinea, - -	800,000	15,000,000	Monrovia.
Lower Guinea, - -	1,000,000	10,000,000	St. Paul de Loanda.
Central Africa, -	2,500,000	10,000,000	Kaseh.
Eastern Africa, -	1,000,000	16,000,000	Zanzibar.
South Africa, - -	500,000	2,000,000	Cape Town.
Madagascar, - -	230,000	3,000,000	Tananarivo.

Coast-Line.—Africa is a compact and solid mass with few indentations and no important peninsulas. In this respect it presents a great contrast to the continents of Europe and Asia, and Europe has almost four times the length of coast-line in proportion to its size. The north coast, with the exception of the delta of the Nile and the low tract between Barca and Tunis, is bold and rocky, and the shores continue of this character as far as *Cape Bojador.* A low shore then leads round to the Gulf of Guinea, and as far south as *Cape Negro.* At this point the coast again becomes rocky, and continues so as far as the *Cape of Good Hope.* The east coast is not bold, but it is more healthy and fertile than the west, with the exception of some low marshy tracts here and there. From Magadoxo, however, to *Cape Guardafui,* the shores are barren and rocky Arid and rocky shores also form the western coast of the Red Sea. The total length of coast-line is about 16,000 miles.

In Tripoli the desert of Sahara advances almost to the shores of the Mediterranean, and the Gulfs of **Sidra** and **Kabes** are both shallow and encumbered with sandbanks. The Gulf of Tunis lies between **Cape Bon** and **Cape Blanco**, the latter being the most northerly point in Africa. From Cape Blanco to **Cape Spartel** the coast is backed by the Atlas Mountains, and hence its rocky character. **Cape Nun**, in the south of Morocco, was for a long time the limit beyond which European navigators had not passed. Off this part of the coast are the **Madeira** and **Canary Islands**. Further south we pass Capes Bojador (round), Blanco (white), and Verde (green). The **Cape Verde** Islands belong to Portugal. The coast of Upper Guinea, which extends from Sierra Leone to the mouth of the Niger, is divided into the Grain Coast, the Ivory Coast, the Gold Coast, and the Slave Coast, according to the characteristic productions of each part. The chief capes are **Palmas, Three Points**, and **Formosa**, the latter on the delta of the Niger. The Gulf of Guinea contains two smaller inlets termed the **Bight of Benin** and the **Bight of Biafra** respectively. **Fernando Po**, in the Bight of Biafra, belongs to Spain.

South of the Gulf of Guinea the chief capes on the west coast are **Capes Lopez, Negro** (black), and **Good Hope**. The Portuguese navigators, who were the first to pass Cape Nun, in the beginning of the fifteenth century, continued gradually to extend their knowledge of the west coast until Bartholomew Diaz, in 1486, discovered the Cape of Good Hope. Eleven years later Vasco de Gama doubled the Cape and succeeded in reaching Hindostan. The most southern point in Africa is **Cape Agulhas** (needles). Following the coast of Cape Colony and Natal we next reach **Delagoa Bay**, beyond which is **Cape Corrientes** (currents). The Mozambique Channel lies between Madagascar and the mainland, and at its northern entrance are the **Comoro Islands**. They are inhabited by Arab tribes under a native Sultan, but one of the group, Mayotta, belongs to France. At **Cape Delgado** commences the coast of Zanzibar, which stretches north as far as Magadoxo. **Cape Guardafui** is the most eastern point in Africa. The island of **Socotra**, about 150 miles to the east, belongs to the Sultan of Omaun. The whole coast, from Berbera to Suez, belongs to Egypt.

SURFACE.—In Africa the chief mountain ranges lie round the coast, leaving a depressed basin-like surface in the interior. In the north we have the *Atlas Mountains*, which commencing in the south of Morocco, stretch north and east parallel with the coast. The western portion is the highest, averaging about 8000 ft., and **Mount Miltsin**, to the south-east of the town of Morocco, attains an elevation of 11,400 ft. As the chain proceeds eastward it decreases in elevation, and along the coast of Tripoli it is reduced to a range of low sand hills running along the coast. The plateau of Barca, however, reaches an elevation of 1500 ft. The *Mountains of Abyssinia* spring from a plateau which in the east rises 8000 or 9000 ft. above the Red Sea, but declines towards the west to about half that elevation. **Abba Jared**, the culminating peak, reaches a height of 15,000 ft. From Abyssinia the *East Coast Range* runs southward, parallel to the shores of the Indian Ocean, with an average elevation of 6000 ft.; but in the neighbourhood of the equator, **Kenia** and **Kilimanjaro** attain an elevation of about 20,000 ft., and, so far as is known, are the highest summits in Africa.

The East Coast Range is connected with the *Drakenbergen* and *Nieuveldt Mountains* of Natal and Cape Colony. From the Orange River to Cape Negro the low sandy shore is backed by a range of low sandstone hills; but in Benguela the *West Coast Range* is well defined, and it runs northward leaving broad grassy plains in some parts; in others, shores clothed with forests. The **Peak of Cameroons** rises to a height of 13,000 ft. Along the north shores of the Gulf of Guinea are the *Kong Mountains*, which average about 4000 ft., but increase in elevation towards the west. Spurs from this chain overrun Senegambia and Sierra Leone. Besides these coast ranges there are the *Mountains of the Moon*, between the Albert Nyanza and Tanganyika, which contain the summit of **Mfumbiro**, 10,000 ft. in height, and probably other summits still more lofty; and on the western side of the Albert Lake are the *Blue Mountains*.

The great physical feature in the north of Africa is the **Sahara** or Great Desert. It extends from the base of the Atlas Mountains to the parallel of 15° north, a distance of about 1000 miles; and it stretches from the Atlantic to the River Nile, more than three times that distance. Wherever wells are met with fertile oases break the barren monotony of the surface, and in some parts there are plateaus which receive abundant rain. About the meridian of 14° east, the district of Fezzan contains several fertile spots, and the plateau of *Air* or *Asben* has valleys and upland plains rich in trees and good pasture; but in the west there is a tract equal in area to the Mediterranean, covered with trackless sands which are prolonged, as sandbanks, for miles into the Atlantic Ocean. Some parts of the Sahara, in the west, are below the level of the sea, and in no portion of it does it rise above two thousand feet. To the south, the country rises in terraces to 4000 ft., and the interior of the continent maintains this elevation pretty generally as far south as the Orange River. This interior table-land is for the most part of great fertility. North of the equator are various tribes rich in herds of cattle and goats; to the south are extensive forests, except where the ground has been cleared in the immediate neighbourhood of the villages. South of the Zambesi, however, there is a deficiency of water, but the **Desert of Kalahari** has an abundant vegetation, and supports an extraordinary number of wild animals.

MINERALS.—The minerals of Africa have not been worked to any great extent. *Gold*, in the form of dust, is met with on the Guinea coast, in Abyssinia, in the valley of the Zambesi, and on the east coast of Africa. *Diamonds* are abundant in the valley of the Orange River. *Iron* is found in the Atlas Mountains, in the Egyptian desert, in the western part of the basin of the Nile, and in the "Karoos" of South Africa. It is also produced and worked by many of the native tribes of the interior. *Copper* is obtained from the Atlas Mountains. It is abundant also in the valley of the Lualaba, in the upper basin of the Zambesi, and near the mouth of the Orange River. *Rock-salt* of great purity is found in the western half of the Sahara, and both salt lakes and brine springs are numerous in the valleys of the Atlas Mountains and in other parts. But some of the tribes who inhabit the upper part of the basin of the Nile—in the valleys of the Bahr-el-Gazelle and its tributary streams—suffer much inconvenience for want of salt.

RIVERS AND LAKES.—The chief rivers are the Nile, which flows into the Mediterranean; the Senegal, Gambia, Niger, Ogowai, Congo, Coanza, and Orange River, which flow into the Atlantic; and the Limpopo, Zambesi, Rovuma, Rufiji, and Juba, which flow into the Indian Ocean.

The **Nile** has its source in a large lake, the *Victoria Nyanza*, the southern extremity of which is nearly 3° south of the equator. The stream which issues from this lake enters the *Albert Nyanza*, and out of this lake issues the **White Nile**, flowing in a northerly direction past Gondokoro until it reaches the junction of the Bahr-el-Ghazelle, which, at its confluence, forms a large shallow lake or swamp. The Bahr-el-Ghazelle is supplied by a number of streams some of which rise as far south as 3° north, and others as far west as the 26th meridian, but the quantity of water brought down to the Nile is not great. The main stream now turns eastward for a short distance, and is joined by the Sobat on the right bank. It then flows almost due north, and at Khartoum is joined by the **Blue Nile.** This stream issues from two fountains in Abyssinia, at an elevation of 10,000 ft., and flows northward to the *Lake of Dembea.* Issuing from the lake, the stream flows south, then west, and finally north until it joins the White Nile. The Blue Nile, in summer, is not navigable between Senaar and Khartoum; but shortly after the rainy season it brings down an immense volume of water, and to it the rising of the Nile in Egypt is mainly due. Its source was discovered by Bruce in 1770, and it was long looked upon as the main branch of the great river. Below Khartoum, the Nile is joined by the Atbara, and then for the remainder of its course —about 1400 miles—the Nile does not receive a single tributary. Between Khartoum and Egypt the river forms a number of rapids known as the "six cataracts." The last cataract is above the confluence of the Atbara; the first is near Assouan. From this point the Nile flows with a gentle current to the sea, and at its outlet forms a delta, which has an area of 7000 square miles. The total length of the river must exceed 3000 miles.

The **Niger** rises in the Kong Mountains and flows north-east to Timbuctoo. It next turns eastward for some distance, and then flowing to the south-east, is joined by the Tchadda. This tributary was at one time thought to have its source in Lake Tchad, but this opinion is no longer entertained, though the exact position of its source is not known. The Niger now flows directly south and empties itself by a large delta, after a course of about 2500 miles. The source of the Niger has never been visited by any European, nor has any traveller explored the river between Timbuctoo and Yaouri, except Mungo Park, and he was killed and his papers all lost (1805).

The **Congo** flows into the Atlantic by a broad estuary about six miles in width. In 1816 an expedition was sent out under Captain Tucker to explore the river, and he succeeded in advancing 280 miles up the stream, but was then obliged, owing to the sickness of his party and the lateness of the season, to return. At the distance of 140 miles from its mouth the river forces a passage through the West Coast Range, and, for a distance of about 40 miles, forms a series of rapids, called by the natives *Yellala.* In this part the river was from 300 to 500 yards wide, but beyond the rapids it expands in width to two, three, and even four miles. At the point where Captain Tucker was obliged to abandon the journey, the Congo was flowing from the north-east. An important stream called the Kassabi or Kassai, which has its source about 10° south, was at one time considered to be the upper course of the Congo, but the recent discoveries of Commander Cameron seem to indentify the Congo with Livingstone's **Lualaba.** This river, under the name of Chambesi, rises south of Tanganyika and enters *Lake Bangweolo* or Bemba. Issuing from that lake, under the name of Luapula, after passing through *Lake Moero*, it takes the name of Lualaba, and next enters *Lake Lanji* or Ulenge. Just before entering this lake it is joined by a large stream which passes through *Lake Kassah* and a chain of smaller lakes. It is also probably joined on the right bank by the **Lukuga,** which Cameron discovered to be an outlet of Tanganyika. From Lake Lanji the stream flows north-west and is joined by another important tributary called Lomani. Cameron was only able to trace the river as far as Nyangwe, about 4° south of the equator and 26° east longitude, but from the information which he there collected with respect to the lower course of the Lualaba, he is convinced that this river is the Upper Congo.

The **Zambesi** is formed by two streams, the Leeambye and Leeba. The former rises in the neighbourhood of Lake Bangweolo, and the latter in *Lake Dilolo*. The united stream then flows southward, through the Barotse valley, and below Sesheke is joined on the left bank by the Chobe. A little below the junction are the celebrated *Victoria Falls*, caused by an immense crack in the rock which forms the bed of the river; into this fissure the Zambesi, which has here a breadth of nearly 2000 yards, pours its waters. Columns of vapour rise from the abyss and are visible at a distance of four or five miles. The narrow channel into which the river falls is continued away to the left, and the Zambesi flows north-east until it is joined by the Kafue on the left bank. It then turns eastward and crosses the East Coast Range. Below Sena, the main stream is joined by the Shire which drains the *Nyassa*, a lake which rivals Tanganyika in size. Near the southern extremity of the Nyassa is a smaller lake, *Shirwa*, which is completely enclosed by mountains, has no outlet, and its waters are salt. The Zambesi empties itself by a delta after a course of about 2000 miles.

CLIMATE.—The greater portion of Africa lies within the tropics, and hence it has a higher temperature than any other continent. In the Sahara, owing in great measure to the nature of the surface, the heat is intense and the thermometer sometimes stands at 113° in the shade. Indeed the hottest tract upon the globe is the district lying between the 15th and 30th parallels of north latitude, and extending from the centre of the Sahara to the shores of the Persian Gulf. In South Africa, in the neighbourhood of Lake Ngami, Dr. Livingstone found that the water in the ponds had on some occasions a temperature of 100°. The central parts of the continent, owing partly to elevation and partly to the numerous lakes and large forests, have not such a high temperature as we should suppose. Algiers, on the coast of the Mediterranean, has an average annual temperature of 64°; Cape Town, at the other extremity of the continent, has an annual average of 60°.

The climate of Africa is sometimes described as being characterised by remarkable dryness, but this is only partially true. The northern and southern extremities of the continents, like all sub-tropical countries, are deficient in moisture, but the central parts have abundant rains. Dr. Livingstone describes the country to the west of the Nyassa as consisting for the most part of "dripping forests," and the watershed from which the Lualaba and Zambesi rise as "a perfect network of streams rising out of a spongy soil." In Egypt, and over a great part of the Sahara, on the other hand, rain seldom or never falls. The trade winds are deprived of a great portion of their moisture by the mountains of Nubia and Abyssinia, and there are no elevations to catch the passing clouds, which are often dissipated by the heat reflected from the sandy surface. The plateau of Asben, however, which has an elevation of from 4000 to 5000 ft., is refreshed by showers from the clouds brought from the Mediterranean, and has an abundant vegetation. In that portion of the continent which lies within the tropics, the rainy seasons follow the sun. In the extreme north and south, winter rains prevail. The west coast of tropical Africa is very trying for Europeans, owing to the deadly fevers produced by the moist and heated atmosphere; but the higher grounds of the interior are perfectly healthy, if proper precautions are observed.

VEGETATION.—The vegetation of Africa varies with the soil and climate. The parts bordering on the Mediterranean possess a flora similar to that of Southern Europe; wheat, rice, and maize are cultivated, and the orange, olive, and vine flourish. The scanty vegetation of the Sahara consists of a few prickly shrubs and thin grasses in some parts, but wherever the oases occur the *date palm* grows, and forms the staple food of the inhabitants. South of the Sahara this palm disappears, but others take its place, and among them that from which palm-oil is extracted. The western half of Central Africa is covered with primeval forest, except where it has been cleared round the native villages. Here flourish the ebony and other dye-woods, teak and other hard woods, gum-trees of various kinds, and the huge *baobab*, with its trunk sometimes more than thirty feet in diameter. On the eastern side of this part of the continent, the country has a park-like scenery, with well-wooded hills and grassy plains. *Coffee* is believed to be a native of Kaffa, a district south of Abyssinia, where it is said to grow wild in dense thickets. Still further east, and immediately south of the Gulf of Aden, is a region celebrated for cinnamon, myrrh, cassia, and other *aromatic plants*. The desert of Kalahari produces a large number of plants with tuberous roots, the most remarkable of which is the *water melon*, which bears a cool and delicious fruit. The vegetation of Cape Colony is distinguished by its plants with thick fleshy leaves, by the number and variety of its heaths, and by its bright and beautiful flowers.

ANIMALS.—The animals of Africa are large and numerous, and it is especially rich in its *pachyderms* or thick-skinned animals, some of which, including the giraffe and hippopotamus, are peculiar to it. Among the other pachyderms may be mentioned the elephant, rhinoceros, and zebra. *Antelopes* of various kinds are numerous in Southern Africa, and are found roaming in large herds along the east coast as far north as the equator. Seventy species have been described as belonging to this continent, and they vary in size from one about the size of a hare to the eland, which is larger than an ox. The western portion of Equatorial Africa seems the especial home of monkeys. Here is found the chimpanzee, the savage *gorilla*, and the nest-building ape. The tiger is not found in Africa; but of other carnivorous animals may be mentioned the lion, hyena, leopard, wolf, and jackal.

Of the **lion** there are three varieties: those of Senegal, Barbary, and the Cape respectively. There are two varieties of the **hyena**, the spotted and striped; the former inhabits the southern, the latter the northern part of the continent. Several species of **buffalo** occur in a wild state especially in South Africa, and the wild boar is found in some parts. Among other animals may be mentioned the large-tailed sheep found both in the Barbary States and in Cape Colony; the **civet**, which is reared by the natives in many parts for the sake of its perfume, and the **camel**, which is found all over the northern and central regions of the continent.

The birds of Africa include the ostrich, with parrots, sun-birds, and others of brilliant plumage. The **honey-birds**, found in Southern Africa, represent the humming-birds of the new world; they live entirely upon the nectar which they obtain from flowers. The secretary, or **snake-eater**, also found in Southern Africa, is a useful bird of prey, as it feeds exclusively on reptiles. The **guinea-fowl** are natives of tropical Africa, where they wander in flocks among the brushwood on the banks of rivers and lakes. Among reptiles may be mentioned the huge python found in Northern Africa; the crocodile, common to all the large rivers and abundant in the lower course of the Nile; the **cobra** or hooded snake, found chiefly in Southern Africa and on the shores of Guinea; and the **chamelion**, which is common to all parts of the continent. Insects are very abundant; and especial mention may be made of the locusts of the north, the white ants of Western Africa, and the tse-tse fly of the Barotse valley; all are remarkable for their destructive habits.

PEOPLE.—The total population of Africa is estimated at 200,000,000, the greater proportion of whom belong to the *negro* type. The negro is characterised by a retreating forehead, wide mouth, thick lips, and woolly hair. The race is found capable of bearing great bodily fatigue, and the intellect is quick but not deep. The type is found in its greatest purity in Central and Western Africa. In Southern Africa there are two varieties: the *Hottentots* and *Kaffirs*. The Hottentots were the original inhabitants of Cape Colony, their colour is a dark and yellowish brown, and they are naturally among the most degraded members of the human family. The Kaffirs dwell to the east and north of the Cape, and extend along the east coast as far as the equator. Their colour is generally a deep brown, and their hair less curly than that of the true negro, and they are generally tall and well made.

Northern Africa is chiefly inhabited by three races, the Berbers, the Moors, and the Arabs; all these are supposed to belong to the Caucasian type. The **Berbers** are supposed to be descendants of the original tribes who inhabited the States of Barbary. The **Moors** are a mixed race, descended partly from the original inhabitants and partly from successive colonists and conquerors. The **Arabs** have spread over a large portion of Northern Africa, and Arabic is understood, more or less, all over the continent to the north of the equator. Round the margin of the continent the native tribes have become very much mixed through intercourse with European and Asiatic races. Thus the Arabs have spread over the north and east of the continent; the Portuguese on both the east and west coasts, the English and Dutch in South Africa, and the French in Algeria. A great portion of the inhabitants of Africa still profess paganism, but Mohammedanism is the prevailing religion in the north of Africa. The inhabitants of Abyssinia profess a corrupt form of Christianity, and the Christian religion has been introduced into the English, French, and Portuguese settlements, as well as among some of the tribes of the interior.

BARBARY STATES.

The country included under the general name of Barbary extends from the Atlantic on the west to Egypt in the east, and includes Morocco, Algeria, Tunis, and Tripoli. The chief physical feature is the chain of the *Atlas Mountains*, which consists of two ranges: the Greater Atlas, which extends from Cape Nun to the Gulf of Cabes, and the Lesser Atlas, from Cape Spartel to Cape Bon. Between these ranges is a plateau which rises in terraces to the greater ridge, and contains many rich valleys with a delightful climate and a fertile soil. In Morocco wide plains extend along the coast; in Tripoli the desert almost reaches the shores of the Mediterranean; while in Algiers and Tunis there is a rapid descent to the sea. On the south side of the Atlas chain the slope is more gradual, and a fertile belt of country which stretches along the foot of the mountains is known as *Belad-el-Jereed*, or "Land of Dates." The rivers are short and of little importance, if we except the *Draha* and *Tensift*, in Morocco, and the *Shellif* in Algeria; those which rise on the southern slope of the mountains disappear in salt marshes. The Atlas Mountains are rich in ores of iron, lead, copper, and silver.

The climate is temperate on the north side of the mountains and tropical on the south side. The vegetation on the northern slope is similar to that of Southern Europe, and is characterised by the presence of the cork, arbutus, cypress, and other evergreen trees. The vine, olive, orange, lemon, almond, and fig grow freely, and the chief grains cultivated are maize, wheat, barley, and dourrah, or millet. *Mignionette* is a native of Barbary, whence it was introduced into France in the last century. Cotton and tobacco are also grown. Among the wild animals may be mentioned the lion, striped hyena, panther, wolf, jackal, lynx, wild boar, and a species of monkey. The cuckoo, nightingale, and stork, spend their winters in Northern Africa; and the ostrich is found in the south of Morocco. Barbary is famous for a fine breed of horses, known as *barbs*, they were introduced into Spain by the Moors. The inhabitants consist chiefly of Berbers, Moors, and Arabs. The Berbers dwell in villages among the mountains, and are a pastoral people; the Moors form the bulk of the population in the towns; the Arabs dwell in tents and lead a nomadic life. Besides these races there are a number of French, Turks, and Jews. The Jews are numerous in all the large towns, and in the town of Tunis form almost half the population.

Morocco, the largest of the Barbary States, has an area of about 260,000 square miles, of which the "Tell," or fertile region of the mountains and coast, contains 76,000. The empire consists of the kingdoms of Fez and Morocco, and the territories of Suse, Draha, and Taflet. The soil is fertile, but agriculture is backward. The chief productions are wheat, barley, maize, esparto grass, and hemp. Immense quantities of dates and other fruits are also produced. The chief manufacture is that of *leather*, made from the skins of goats. A considerable trade is carried on with England, Central Africa, and the East. The trade with Central Africa is conducted by means of caravans which proceed from Taflet to Timbuctoo, whence gold dust, ivory, ostrich feathers, and slaves are obtained in return for manufactured goods, salt, and tobacco. The trade with the East is carried on partly by caravans and partly by means of small vessels called feluccas which proceed to Alexandria. The chief ports are Mogadore and Tangier: *Tetuan* and *Ceuta* belong to Spain. The total population is about 8,000,000; the bulk of the inhabitants are Moors, who are strongly attached to Mohammedanism. The government is despotic. The chief towns are *Fez*, *Morocco*, *Mequinez*, and *Tangier*. **Fez**, the largest, has a population of 80,000, and is the chief residence of the Sultan.

Algeria, a French colony, has an area of about 250,000 square miles. It is naturally divided into three parts: the "Tell," or coast district; a broad plateau of steppe lands; and the southern slope. Large tracts of land have been reclaimed from the Sahara by means of Artesian wells. The soil is extremely fertile, and minerals are abundant. *Diamonds* are found in the neighbourhood of Constantine, and *coral* to the eastward of Bougie. Much of the land still remains uncultivated, but among the productions are indigo, cotton, tobacco, cochineal, and esparto grass—the latter being now largely used in the manufacture of paper. The Berbers extract iron, copper, and lead from their ores, but the chief wealth of the natives consist in their cattle. The manufactures are confined to the towns, for the most part, and include jewellery and watch-making. Bougie is famous for its wax candles (Fr. *Bougies*). About 400 miles of railway have been introduced, and the telegraph connects the chief towns. The population is about 3,000,000, of whom about 200,000 are French settlers. The chief towns are *Algiers*, *Constantine*, *Oran*, and *Bona*. **Algiers** was formerly noted for its piracy, and in 1816 the town was bombarded by Lord Exmouth, who destroyed the fleet in the harbour and compelled the Dey to release his Christian captives. In 1830, the Dey having refused redress for striking a consul, the town was captured by the French, and the whole province annexed. The population of Algiers is about 50,000.

Tunis, the smallest of the Barbary states, has an area of 45,700 square miles, and a population of about 2,000,000. The country here is of less elevation than in Algeria, and the climate warmer. The soil is fertile, and among the productions are opium and sugar. The manufactures include shawls, carpets, and the *bornoose*, a loose woollen garment worn universally by the Moors and Arabs. To these may be added the *beretti*, or red cap, so common among the sailors of the Mediterranean, and soap. The chief town is **Tunis**, the largest city of Barbary; it has a population of 125,000, of whom about 40,000 are Jews. Thirteen miles to the north-east is the site of the ancient *Carthage*. The government is carried on by a Bey, who is nominally subject to the Sultan of Constantinople.

Tripoli, including also *Fezzan* and *Barca*, has an area of about 350,000 square miles, with a population of 1,500,000. A narrow strip of fertile country extends along the coast, but beyond the low range of hills is the desert. *Dates* form the chief food of the inhabitants, and grapes and other fruit come to great perfection. Caravans proceed from Tripoli to Mourzook, in Fezzan, where a large fair is held in the months of December and January. The town of **Tripoli** has a population of 25,000. The chief exports are wool, mantles, skins, fruits, ostrich feathers, and gold dust. Fezzan is a large oasis, or rather a collection of small oases. *Mourzook*, the chief town, is a great centre of internal trade, and caravans proceed to Tripoli, Cairo, Bornou, and even Ashantee. Barca is a small plateau with an elevation of 1500 ft. It is now almost a desert, but in ancient times was the seat of five flourishing cities, known as the Pentapolis. These were Berenice, Cyrene, Arsinoe, Barca, and Appollonia. The chief town at present is *Benghazi*, which is the second city of importance in the state of Tripoli, and has a population of 22,000. The governor of Tripoli has the title, rank, and authority of a Pasha of the Ottoman Empire, and is generally selected from the Turkish officers resident in the city.

EGYPT.

EGYPT, in the widest acceptation of the term, embraces a vast territory extending from the Mediterranean to the Equator, and bounded by the Red Sea and the Desert of Sahara on the eastern and western sides respectively. This large territory, leaving out Abyssinia, cannot have an area much less than 1,000,000 square miles. A great portion of it, however, is sandy desert, and over very much of it the rule of Egypt is by no means secure. It may conveniently be divided into three parts: Egypt Proper, Nubia, and the Region of the Upper Nile.

EGYPT PROPER.

Egypt Proper extends from the mouth of the Nile to the first cataract at Assouan, and embraces an area of 212,600 square miles. Only a small portion of this area, however, is capable of cultivation, as the country depends for its fertility mainly upon the annual inundation caused by the rise of the Nile. The breadth of the river valley is seldom more than ten miles, and often, in Upper Egypt, is not more than two; the average may be taken at six miles. The delta begins just below Cairo, about 90 miles from the sea, and the greatest breadth of the delta is eighty miles. The area of cultivable land, however, extends beyond the delta, on each side, and the area of fertile country belonging to the Nile, in Egypt Proper, has been estimated at 16,000 square miles.

At Assouan the Nile has a breadth of about 3000 ft., but as it receives no feeders in this part of its course, and as much of its water is carried off by canals for purposes of irrigation and a portion lost through evaporation, the volume of water gradually decreases on its way to the sea. The mountains which bound the river on each side sometimes attain an elevation of 1000 ft., but those on the eastern side are the more rugged and run close to the river, while the *Lybian Hills*—as the western range is called—sometimes recede to a distance of ten or fifteen miles. Throughout Middle and Lower Egypt an artificial channel, called the Bahr Yousef (*Canal of Joseph*), runs along the western side of the river, and is connected with it by numerous short streams which serve to distribute the water. At Benisouef there is a break in the Lybian hills, and a portion of the waters of the Nile, after fertilising the beautiful district of Faioum, enters *Birket-el-Keroun*, the ancient Lake Moeris. North of Benisouef the Lybian range is continued, though with diminished height, and at Ghizeh forms a kind of terrace on which the pyramids are erected. The Eastern range turns off to the right near Cairo, and under the name of *Jebel Attaka* reaches the Red Sea in the neighbourhood of Suez. The delta of the Nile, in former times, was larger than it now is, and the ancients were acquainted with seven channels by which its waters reached the sea. All these, however, have been silted up except the second (Rossetta branch) and the fourth (Damietta branch). The outlet of the Pelusiac branch, which formed the eastern limit of the delta in ancient times, is now occupied by *Lake Menzaleh*, a vast salt marsh, through which runs the Suez Canal.

On the west of the Nile are some remarkable oases, generally occupying depressions below the ordinary level of the desert. In the south are the *Oases of Chargeh* and *Dachel*, at distances of 100 miles and 200 miles respectively from the town of Esne, each of which supports some thousands of inhabitants. Further north is the *Little Oasis*, rich in fruits and grain; and about 300 miles due west of Faioum is the *Oasis of Siwah*, which contains the ruins of the temple of Jupiter Ammon, visited by Alexander the Great. The inhabitants of these oases are of a mixed negro race. The surface of the desert on the eastern side of the Nile is broken by rugged mountains and intersected by ravines, some richly clothed with verdure, and inhabited by various tribes of wandering Arabs. Across the desert runs the caravan route from Kenneh to Cosseir.

Egypt is not remarkable for its minerals, but in ancient times valuable mines of copper, lead, and emeralds, were worked in the Eastern desert; and in the neighbourhood of Assouan (an. *Syene*), there are large quarries of red granite known as Syenite. There are also valuable sulphur mines in active working near the entrance of the Gulf of Suez.

Climate and Productions.—The climate is hot and dry, but not unhealthy. The hot season lasts from March to October, but the heat is tempered by the north winds, by the inundations, and by copious dews. During the month of May and the beginning of June a hot south wind called the *Khamsin* prevails. It is identical with the simoom of Arabia, and is oppressive and unhealthy. Rain is very scanty, and some seasons pass without a shower, but this is not usual. Snow is totally unknown, and thunder and lightning nearly so. The *date-palm*, the acacia, and the sycamore, are scattered throughout the country; large plantations of *roses* are found in Faioum, and the soil and climate are well suited for cotton, sugar, rice, indigo, cucumbers, melons, and onions. Wild beasts are not common, as there is an absence of forests. The crocodile and hippopotamus are found in Upper Egypt, and the hyena is common in all parts. The *ichneumon*, so useful in destroying the eggs of the crocodile, is peculiar to the banks of the Nile, and the sacred *ibis*, so frequently represented in the monuments of ancient Egypt, still exists.

PEOPLE.—The population amounts to about 5,200,000, and includes Arab-Egyptians, Copts, Turks, Greeks, Armenians, and Jews. The Arab-Egyptians form the bulk of the inhabitants, and are probably the descendants of those who conquered Egypt in the seventh century. They are divided into two classes: the *Fellahs* or peasantry, and the *Bedouins* of the desert. The Copts are regarded as descendants of the ancient Egyptians, and are probably of negro origin; they number about half a million.

The Copts, Greeks, and Armenians, are Christians. The Arabs and Turks Mohammedans. The **Copts** make the best accountants in the country, and few respectable traders are without a Coptic clerk. The **Turks** only number about 300,000, but they are masters of the country and fill all the high offices of state. The **Greeks** and **Armenians** are chiefly devoted to mercantile pursuits. The **Jews**—a despised race—are occupied as bankers, money-changers, and gold and silver smiths. All religions enjoy a fair amount of toleration. The *Khedive*, as the supreme governor is called, is practically an independent sovereign, though he yields homage to the Sultan.

INDUSTRY.—Agriculture forms the chief occupation of the people, and besides *cotton*, the principal crops raised are rice, maize, wheat, and millet. Flax, hemp, sugar, coffee, indigo, and raw silk, are also produced. The fertility of the country depends upon the annual rise of the Nile, which is hence a subject of much anxiety to the people. Should it pass its customary bounds by a few feet it might cause great destruction of property; on the other hand, a falling short might produce famine.

The Nile begins to rise about the end of June, and continues rising until the end of September, when its waters remain stationary a few days and then retire. The waters at this period are charged with a thick sediment of black mud, brought chiefly from Abyssinia, and a portion of this being left behind imparts fertility to the soil. Formerly, at the height of the inundation, the whole delta had the appearance of an immense lake, the villages, which are generally built on rising ground, appearing as islands;

but since the introduction of the cultivation of cotton the river is no longer suffered to inundate the country, but is banked up in its channels and drained off for purposes of irrigation as it may be required.

The manufactures of Egypt are chiefly confined to the making of *earthenware*, Kenneh being the centre of the trade. Cotton and woollen fabrics are also made to a small extent. The commerce is very considerable, and centres chiefly in Alexandria. The chief exports are cotton, grain, indigo, opium, coffee, and gum; there is also a great transit trade between Great Britain and India. There is a railway from Alexandria to Cairo, and branches from thence to Damietta, Ismailia, and Suez; a line is also being carried up the valley of the Nile and has already reached Siout. Still more important, in its influence on trade, has been the opening of the Suez Canal.

The **Suez Canal** runs from Port Said, on the shores of Lake Menzaleh, to the town of Suez, a distance of about 100 miles. It runs through Lake Menzaleh, Lake Timseh, and the Bitter Lakes, and as it admits vessels of a considerable size, it is now the great highway to the East Indies. Ismailia, on the northern side of Lake Timseh, has grown up with the canal, and will doubtless, in the future, be a great commercial centre.

TOWNS.—Egypt is divided into fourteen provinces for administrative purposes, but the usual divisions on a map are those of Lower, Middle, and Upper Egypt.

DIVISIONS.	TOWNS.
Lower Egypt,..............	Cairo, Alexandria, Tanta, Rosetta, Damietta, Port Said, Ismailia, Suez,
Middle Egypt,..............	Medinet-el-Faioum, Benisouef, Minieh.
Upper Egypt,..............	Siout, Kenneh, Esne, Assouan, Cosseir.

Cairo, the capital of Egypt, and the largest town in Africa, stands on the eastern bank of the Nile about 20 miles above the commencement of the delta. It is surrounded by walls, and lies in the midst of gardens and groves; but the streets are narrow and crooked. The bazaars are numerous and splendid, and well supplied with goods of every description. The population is 350,000. On the opposite bank of the river is the small town of *Ghizeh*, in the neighbourhood of which are the three largest of the Egyptian pyramids. The largest—that of Cheops—covers an area of eleven acres, and rises to a height of 480 ft. To the south of Cairo is the site of the ancient city of *Memphis*.

Alexandria, the chief commercial port of Egypt and its naval station, stands on an isthmus which was originally a causeway connecting the ancient city with the island of Pharos. The circuit of the ancient city, founded by Alexander the Great, is still traceable. *Cleopatra's Needle* and *Pompey's Pillar* are in the neighbourhood of the old city. *Aboukir Bay*, where Nelson won his famous victory (1798), lies to the north-east of Alexandria. The present population is about 200,000.

Tanta, at the junction of the railways to Alexandria, Cairo, and Damietta, is a considerable town with a population of 60,000. **Rosetta**, on the western branch of the Nile, is not a place of importance, as most of its trade has been transferred to Alexandria. It is famed for its gardens, which supply Cairo with oranges and other fruits. **Damietta**, on the eastern branch, stands in the midst of rice fields. **Port Said**, the entrance to the Suez Canal, has now a population of about 10,000. **Ismailia** has about the same number of inhabitants. **Suez** has risen into considerable importance of recent years, and has a population of about 15,000.

CAIRO.

Siout, the largest town in Upper Egypt, is a great starting place for caravans to Senaar and Darfur. **Kenneh** is famous for its potteries. From this point a caravan route leads to Cosseir on the Red Sea. **Esne** has some manufactures of cottons and shawls. Between Kenneh and Esne is the site of ancient *Thebes*, of which there are magnificent remains in temples, tombs, sphinxes, and colossi. **Assouan**, near the first cataract, is the ancient *Syene*, and is famous for its quarries of red granite. In the river opposite the town is the island of *Elephantine*, which, on account of its fertility, has been called the "Isle of Flowers." A few miles to the south is the island of *Philæ*, covered with the ruins of ancient temples. Almost due east of Assouan, on the coast of the Red Sea, are the ruins of the ancient port of *Bernice*. **Cosseir**, further north, is a small trading port.

NUBIA.

Under the term Nubia we include that vast extent of Egyptian territory which extends from Egypt Proper to the parallel of ten degrees north, and stretches from the Lybian

Desert to the shores of the Red Sea; from this, however, we must except the country of Abyssinia. In the northern portion of this vast area there is little cultivable land, except in the valley of the Nile, which is very narrow. In the south, however, there is an elevated tract watered by the Atbara and Blue Nile, which comes under the influence of the tropical rains. The climate upon the whole is hot and dry, and the chief vegetation in the north consists of acacias, mimosas, and the date-palm. In the south there are extensive forests in which ebony is abundant. The elephant, rhinoceros, and giraffe, with antelopes and ostriches, are numerous. The people of Nubia are a mixed race of Arabs and Negroes, but in the south and south-west are pure negro tribes. The prevailing religion is Mohammedan, but many of the negro tribes are pagans. The industrial pursuits are very limited: *millet* is almost the only grain raised, and this with the fruit of the *date-palm*, forms the chief food of the inhabitants. A few woollen and cotton cloths with cane mats are the chief articles of manufacture. The commerce consists in the transit trade between Central Africa and Egypt. The chief towns are Khartoum, Senaar, Ipsamboul, Suakin, Massowah, Tajurra, and Berbera.

Khartoum, at the confluence of the White and Blue Niles, is the chief town in Nubia, and a great centre of caravan traffic. It exports ivory, ostrich feathers, gum-arabic, and hides. It has a population of about 45,000. **Senaar**, on the Blue Nile, was once the capital of an independent kingdom, but is now a decayed place. **Ipsamboul** is famous for its temples cut out of the solid rock. They rise up close to the river, and in front are six colossal figures about 70 ft. in height. **Suakin**, on an island, is the most populous town on the western coast of the Red Sea. There is a caravan route from this port to Berber, on the Nile, much frequented by Arab merchants. **Massowah**, further south, is the chief outlet for the produce of Abyssinia, which consists chiefly of slaves, ivory, and coffee. The *Dahlak Islands*, opposite Massowah, have valuable pearl fisheries. **Tajurra**, on the shores of a deep gulf opposite to Aden, is the chief outlet for the tribes dwelling south of Abyssinia. **Berbera**, seized by Egyptian troops in 1873, is the outlet for the Somali country. It is celebrated for its large fairs, where merchants from Egypt, Persia, and India, exchange their produce for ivory, gum, coffee, and cattle.

Darfur, a large and fertile district to the south-west of Nubia, was annexed to Egypt in 1874. Its area is nearly twice that of England, and it has a population of about 5,000,000. Maize, wheat, cotton, indigo, and tobacco, are cultivated, and a large number of camels and cattle are reared. The inhabitants are Mohammedans.

Region of the Upper Nile.

The upper region of the Nile is inhabited by various Negro tribes, some of which are in the lowest state of barbarism. To the west of the White Nile, in the country drained by the various streams which flow into the Bahr-el-Ghazelle, the natives have made some advance in civilization. They are rich in flocks and herds, cultivate the ground, and are skilled workers in iron. It is from these regions chiefly that the merchants of Khartoum obtain their slaves and ivory. They have stations called *seribas* established in different parts where the merchandise is collected, and whence it is transported to the Nile by large caravans guarded by soldiers. The Khedive of Egypt has recently adopted energetic measures to put a stop to the slave trade, and with this object in view has established military stations as far south as the great lakes.

From Duffli, a station on the White Nile 164 miles north of the Albert Lake, the Nile is navigable up to the shores of the Albert Nyanza, and in the spring of 1876, M. Gessi, a member of Colonel Gordon's expedition, sailed up the whole distance with a small steamer and two lifeboats, and circumnavigated the lake itself. The country through which this part of the Nile flows is described as rich and fertile; the natives are clothed in the skins of goats or antelopes; and the products of the soil include millet, sesame, honey, tobacco, bananas, and beans. Cattle are abundant, and comfort and plenty seem to reign among the people. The Albert Lake is about 141 miles in length, and its greatest breadth is about 60 miles. The only river of importance flowing into it seems to be the Victoria Nile, and the south end of the lake is shallow and the shore covered with a dense jungle.

ABYSSINIA.

Abyssinia lies to the south-east of Nubia, and has an area of about 160,000 square miles. The surface consists for the most part of a high plateau intersected by deep ravines, and diversified by isolated mountain masses which rise up in several places. Some of these eminences have been fortified, and present very strong positions; such a fort was Magdala, taken by the English in 1868. The climate is very hot in the valleys, but temperate in the uplands. The chief rivers are the Blue Nile and the Tacazze or Atbara. The soil is exceeding fertile, and the principal grains raised are millet, wheat, barley, and maize. Flax and cotton are also grown, and the coffee plant is a native of the country. The manufactures consist of cotton and woollen cloths, leather, pottery, sword-blades, and hardware. The population, which amounts to about 3,000,000, is a very mixed one, including, besides the ancient Abyssinians, Arabs, Jews, Gallas, and Negroes. Most of the people profess a very corrupt form of Christianity, others are Mohammedans; the Gallas are pagans.

Abyssinia was formerly a powerful kingdom, but in modern times it has consisted of several states under independent chiefs. The principal of these are Tigré, Amhara, and Shoa. *Tigré* is the northern division of the country, and is intersected by the Tacazze. *Amhara*, the central region, embraces the district round Lake Dembea. *Shoa* lies in the extreme south-east. No portion of Abyssinia now touches the sea, and in 1875 an Egyptian army penetrated inland so far as Adowa. The chief towns are Adowa, Gondar, Debra Tabor, Magdala, and Ankobar. **Adowa**, the chief town in Tigré, has a population of 8000. It lies in the line of route from Gondar to Massowah, and commands some trade. **Gondar**, the capital of Amhara, was formerly a much more important place than it now is; its population is about 6000. **Debra Tabor**, to the east of Lake Dembea, was King Theodore's capital. **Magdala** lies to the south-east. At the capture of this fortress by the English, King Theodore died by his own hand. **Ankobar**, the capital of Shoa, stands on the south-eastern slope of the plateau, at an elevation of 8000 ft.

THE SAHARA.

The main features of the Sahara have been already described. It consists for the most part of a sandy or stony desert almost destitute of water. In some places, where there are depressions below the general surface, springs of water are met with, and there is an abundant vegetation. In other parts an elevated ridge condenses the clouds, and rains occur. Such elevations are found at *Tibesti*, between Fezzan and Lake Tchad; at *Asben*, to the south-west; and at *Aderer*, to the south of Morocco. The inhabitants are estimated at 4,000,000, and seem to belong to three main divisions: the Tibboos, Tuaricks, and Moors. The *Tibboos*, a negro race, dwell to the east and south-east of Fezzan, and subsist chiefly on the milk and flesh of their camels and on the plunder of travellers. The *Tuaricks* are reckoned the purest type of the Berber race, and are industrious and warlike. All the tribes of the Sahara are more or less nomadic, and are engaged in seeking pasture for their flocks of camels, sheep, and goats, or in caravan traffic. The chief production of the Sahara is *salt*, which is very abundant in the western part of the desert, but scarce in the fertile countries to the south.

The western part of the Sahara consists of a depression many feet below the level of the sea, known as **El Juff**. This depressed region stretches from the southern slopes of the Atlas Mountains to within a few miles of Timbuctoo. It seems at no distant date to have been a large lake or inland sea, communicating with the Atlantic by a narrow channel, opposite the Canary Islands, known as the river Belta. A sand-bar at the mouth of this channel now keeps out the Atlantic, and the waters of El Juff have been dried up by evaporation, leaving a saline incrustation. It has been proposed to cut through this sand-bar, to let in the waters of the Atlantic, and thus to open water communication with Timbuctoo and the fertile and populous districts drained by the Niger.

SOUDAN.

SOUDAN, or Negroland, lies between the Sahara and the equator, and stretches from Senegambia to the borders of Nubia. The western half is watered by the *Niger*, and the eastern half by the streams which flow into Lake Tchad. Dr. Schweinfurth, in 1870, discovered a river named the *Welle*, which rises in the Blue Mountains to the west of the Albert Nyanza and flows to the north-west, and it is probable that this river is either the upper course of the Tchadda, or of the Shari which flows into Lake Tchad: Schweinfurth is disposed to think it is the Shari. There is also an important stream flowing into the Gulf of Guinea—the *Ogowai*—whose source has not yet been determined. The climate throughout Soudan is strictly tropical, rains are abundant, the soil fertile, and vegetation exuberant. The population consists of Negroes and Fellatahs—a mixed race, partly of Negro origin and partly of Berber or Moorish descent. Throughout the greater part of Soudan the Fellatahs are the ruling people, but the Negroes form the bulk of the inhabitants. Agriculture forms the chief employment of the people; rice and other grains, with cotton, indigo, and fruits, are the chief products. The natives show some skill in the manufacture of cotton and silk fabrics, in dyeing, and in the manufacture of mats. The trade is carried on chiefly by means of caravans.

In the upper basin of the Niger is the Negro state of Bambarra; in the states lying further east the Fellatahs are the ruling people, and Mohammedanism is the prevailing faith. Among these may be mentioned the states of Sockatoo, Adamawa, Bornou, and Wadai.

The chief towns in Soudan are Sego, Timbuctoo, Sockatoo, Kano, Kouka. **Sego**, the capital of Bambarra, is the place where Mungo Park first came in sight of the Niger, which he described as being "as broad as the Thames at Westminster." The town has a population of about 30,000. **Timbuctoo** stands a few miles from the north bank of the Niger, and is a great centre for caravan traffic. One caravan starts from Tafilet, in Morocco, and proceeding through Tattah calls at Towdeni, where there is a valuable salt mine, thence it proceeds to Timbuctoo. Another caravan arrives from Tripoli by way of Mourzook, Kouka, and Kano. Timbuctoo is ruled by a native chieftain, and has a population of about 12,000: *Kabara*, on the Niger, is its port. **Sockatoo**, the capital of the kingdom of that name, stands on a feeder of the Niger. It is a well-built town, enclosed by lofty walls, and has a population of 20,000. It was here that the traveller Clapperton died in the arms of his faithful attendant, Richard Lander (1827). Two years latter, Lander, accompanied by his brother, traced the Niger from Boussa to the sea, and thus completed the discoveries of Mungo Park. **Kano**, about midway between Sockatoo and Lake Tchad, is the great commercial entrepôt of Soudan. It has important manufactures of cotton cloths. **Kouka**, the capital of the important kingdom of Bornou, stands about ten miles from the western shore of Lake Tchad. Bornou extends round the north, west, and south of the lake, and embraces a rich agricultural and pastoral district.

Between Bornou and Darfur is the important kingdom of *Wadai*. Dr. Nachtigal estimates the area of the territory at 30,000 square miles, but the influence of the king extends far beyond the limits of his own country, comprising the numerous desert tribes up to the land of the Niam-Niams. The population is about 2,500,000, and the religion of the people Mohammedan. The king is looked upon as a sort of divinity: his word is sacred, and must never be broken whatever may be the consequences. The highest dignitaries of the state, when summoned to appear before their sovereign, must approach him on all fours with their eyes cast on the ground. Taxes are paid in kind, and consist of slaves, ivory, camels, cattle, horses, skins, mats, rice, ostrich feathers, butter, salt, and other produce of the country.

Very little is known of the interior south of the parallel of 10° north, and west of the country drained by the Bahr-el-Ghazelle. Dr. Barth traced the Tchadda or Benue through the Adamawa country within 8° of the equator, and was informed by the natives that the river rose several days journey to the south-east. Dr. Nachtigal has traced the Shari about the same distance south, without finding its source. On the other hand, Dr. Schweinfurth has discovered the **Welle**, which rises in the Blue Mountains to the east of the Albert lake, and flows to the north-west. The point where he struck the river is lat. 3° 37′ north and 28° 10′ east, and he was informed by the natives that it continued to flow to the north-west for several days, and at length expanded into a lake. This river is therefore supposed to be the upper course either of the Benue or the Shari—most probably the latter. If so, the Tchadda must have its source further west; and there is probably a line of watershed somewhere near the equator which separates the basins of the Shari and Tchadda from that of the Congo. We have reason to suppose, also, that the unexplored region is fertile and populous. To the south-west of the district of the Bahr-el-Ghazelle, and partly in the basin of the Welle, is the country of the *Niam-Niams*, a fierce and warlike race who are said to be cannibals. Still further south is the country of the ***Monbutto***, where Dr. Schweinfurth spent several weeks; and he then ascertained that in the neighbourhood of the equator was a race of pigmies named the *Akka*, among whom the average height of a man varied from 4 ft. 4 in. to 4 ft. 10 in. On the west coast Du Chaillu, the French traveller, has made one or two attempts to reach the interior by way of the **Ogowai** river, but he has scarcely penetrated beyond the coast range. From the spot which he reached—about the meridian of 12° 30′ east—the country appeared to slope inward, and the natives spoke of a large river flowing to the south, on the banks of which dwell the Ashangui, a tribe skilful as workers in iron.

WESTERN AFRICA.

UNDER the term Western Africa is included Senegambia, Upper Guinea, and Lower Guinea. It stretches from about 18° north to about 18° south latitude, and includes a succession of low plains lying between the coast ranges and the sea. The climate is hot, and in many parts unhealthy, owing to malaria arising from stagnant waters and decaying vegetation. The inhabitants are for the most part pure Negroes, except in Lower Guinea, where there is a large admixture of Portuguese settlers. In other parts European settlers are very scattered. The chief exports from Western Africa are gold-dust, ivory, palm-oil, gums, feathers, and various kinds of ornamental or dye woods.

Senegambia, watered by the rivers Senegal, Gambia, and Rio Grande, is occupied by a number of petty Negro states, consisting of the Mandigo, Fellatah, and Yaloff tribes. The chief article of trade on the Senegal is *gum*, obtained from the acacia forests which cover the country north of the river. From the Gambia come bees'-wax, ivory, ground nuts, and teak. The English have some settlements on the Gambia. The French possess **Fort Louis**, at the mouth of the Senegal, and a tract of country stretching thence to Cape Verde. The Portuguese possess **Bissao**, at the mouth of the Rio Grande, and one or two other stations.

Upper Guinea extends from Sierra Leone to the Peak of Cameroons, and stretches inland to the Kong Mountains. It was formerly divided by Europeans into the Grain Cost, Ivory Coast, the Gold Coast, and the Slave Coast, according to the production of each district The *Grain Coast* derived its name from a species of pepper called "Grains of Paradise," which are there produced in great abundance. **Liberia**, on the Grain Coast, is an independent Negro republic, founded by the United States in 1820 as an asylum for freed negroes. It is in a flourishing condition, and has a population of 18,000 civilised negroes, besides about 800,000 aborigines. The capital, **Monrovia**, has a population of 13,000.

The *Ivory Coast* extends from Cape Palmas to the mouth of the Assini. **Cape Palmas** was so named by the Portuguese on account of the number of palms which they saw growing in its vicinity. The *Gold Coast* stretches from the Assini to the Volta. The coast district—with the exception of Bassam, Assini, and Dabou, which belong to the French—is under English influence, but in the interior there is the powerful native state of **Ashantee**. *Coomassie*, the capital of Ashantee, was entered and burnt by the English in February 1874. On the *Slave Coast* England possesses the flourishing settlement of Lagos. The most powerful native state is **Dahomey**, of which *Abomey* is the capital. The King of Dahomey has a bodyguard of female warriors.

Lower Guinea includes the lower districts of Loango, Congo, Angola, and Benguela. The country for the most part consists of grassy plains, backed by thick forests, and fringed with a tangled mass of mangroves and tall reeds. The climate is hot and unhealthy, but the soil is extremely fertile. The country is inhabited by various negro races all sunk in barbarism. The Portuguese claim a jurisdiction over the whole district, but their settlements are confined to Angola and Benguela. *St. Paul de Loanda*, a town of about 12,000 inhabitants, ranks as the capital of the Portuguese possessions on the west coast. The chief exports are ivory and palm-oil. Both this town and *Benguela* were formerly notorious slave marts, and the trade is still carried on to some extent.

CENTRAL AFRICA.

UNDER the term Central Africa we include that vast area which extends from Soudan to the Kalahari Desert, and which is bounded east and west by the coast ranges. It includes the region of the equatorial lakes, and the basins of the Congo and Zambesi.

That part of the interior drained by the *Congo* and *Lualaba* seems to be of an extremely fertile character. The oil-palm is found everywhere up to an elevation of 2600 ft., and groves of nutmeg trees grow wild. Sugar, coffee, and rice are grown by the natives, and, in Commander Cameron's opinion, cotton, wheat, and all the productions of southern Europe would succeed. The three most powerful chiefs of this part of Africa appear to be Kasongo, King of Urua, whose capital, *Kilemba*, stands to the north-west of Lake Kassah; Muata Yanvo, King of Ulunda, a country further south, the capital of which, *Kabebe*, stands in the basin of the Kassabi; and Cazembé, whose territory lies in the valley of the Luapula. Between the Lualaba and Lake Tanganyika is the country of the *Manyuema*, covered with forests and swamps. The inhabitants are described by Dr. Livingstone as being a fine race of men, with copper-coloured complexions and well-formed heads. Coffee is cultivated, but not cotton; and a kind of grass-cloth is worn made from the leaves of a palm tree. The natives are skilled workers in iron and copper. Markets are held at stated times, and the women attend them dressed in their best.

One of the most important of these markets is that of **Nyangwe**, which stands on the Lualaba, in lat. 4° 12′ south and long. 26° 31′ east, and was the spot where Cameron was obliged to turn aside from tracing down the river, owing to the opposition of the natives. At this market the trade routes from the east and west coasts of Africa meet. Arab merchants from Zanzibar here trade with half-caste Portuguese from Cassangi and Bihé.

Lake Tanganyika is about 300 miles in length. Its waters are sweet and fresh, and abound in fish; and the shores are densely populated by negro tribes. Ujiji, a country on the north-eastern shore, has been made familiar to us through the visits of various English travellers: the capital is *Kawelé.* The country to the east of Tanganyika lake is nominally subject to the Sultan of Zanzibar, but is occupied by a number of native tribes who are practically independent. The country is fertile and well cultivated, and produces sugar, coffee, cotton, indigo, pepper, and spices. The chief town in these parts is *Kaseh,* the great emporium of the trade in Eastern Africa. *Lake Victoria Nyanza* is the largest of the African lakes, and has an area of 28,000 square miles. Its eastern shore seems to be inhabited by fierce and warlike tribes. On its western shore are the kingdoms of Karagwe, Uganda, and Unyoro. The most powerful of these is *Uganda,* whose king, M'tésé, seems disposed to be friendly with Europeans. Unyoro is practically annexed to Egypt.

It will be noticed that the names of most of the countries in this part of Africa commence with U: this prefix signifies country, and *Wa* means the people. Thus *Warua* means the people of Urua; *Waganda,* the people of Uganda.

The basin of the Zambesi is inhabited by the *Makololo* and other tribes, who are chiefly engaged in agricultural or pastoral pursuits. Livingstone describes the country as rich and fertile; in some parts two crops of corn could be raised in a year, and everywhere there were extensive pastures with thousands of cattle. Elephants, buffaloes, zebras, giraffes, and wild hogs were also in great abundance. Between the Zambesi and the western shores of *Lake Nyassa* the country is but thinly populated, owing to the depredations of the Portuguese slave-traders. With a view of putting a stop to this traffic, and of introducing civilization among the tribes of the interior, a settlement called *Livingstonia* has been formed on the south-western shore of the Nyassa by emigrants from Scotland, and a steamer now navigates the lake.

The country between the Zambesi and the Orange river is inhabited by two races: on the east we have the Matabele, Bechuanas, and other

Kaffir tribes; on the west, the *Hottentots*. *Lake Ngami*, discovered by Livingstone in 1849, is about 70 miles in circuit, and a considerable stream, the Tioge, enters it on the north. The Zouga issues from it, but after flowing some distance is absorbed by the desert in the neighbourhood of some salt marshes. To the south stretches the *Kalahari Desert*. Westward of the desert are Damara and Namaqua Land, which contain some pastoral country, and where copper is abundant; to the east are the Orange Free State and the Transvaal Republic.

EASTERN AFRICA.

The eastern coast, from Delagoa Bay to Cape Delgado, is under the influence of the Portuguese, and the chief towns are Sofala, Quillimane, and Mozambique. *Sofala* is supposed by some to represent the Ophir, whence gold was brought by the ships of Solomon. There are still rich gold-fields in the neighbourhood. *Quillimane*, on the delta of the Zambesi, is a mere village, and stands in an unhealthy situation. *Mozambique*, the capital of the Portuguese possessions on this coast, stands on a small coral island close to the shore. It was once a place of great trade, but its influence has greatly declined. Its chief exports are slaves, ivory, and gold-dust.

The dominions of the Sultan of Zanzibar extend from Cape Delgado to the small island of Warsheikh, in lat. 2° 30′ north. All the islands along this coast, a few small ones excepted, belong to him; but on the mainland his dominion scarcely extends beyond the walls of the towns garrisoned by Arab troops. The country is capable of supplying all kinds of tropical produce, including sugar, cotton, coffee, indigo, nutmeg, cinnamon, pepper, ivory, and gum-copal. A great trade is carried on with India, and this is chiefly in the hands of the *Banians*, who are Hindoos. The chief towns are Zanzibar, Bagamoyo, and Mombasa.

Zanzibar stands upon an island of the same name, which is about 25 miles from the mainland. The island is about 50 miles in length with half that breadth, and is of great fertility. It produces fruits, spices, cocoa-nuts, rice, and sugar in great abundance, and has a population of about 150,000. The chief inhabitants are Arab landed proprietors, who have large estates and numerous slaves. The Banian merchants number about 6000. The town of Zanzibar has a population of 80,000. The chief exports are gum-copal, cloves, ivory, and cocoa-nut oil. **Bagamoyo**, on the mainland opposite, is the starting place for the caravans, which proceed to Kaseh and other places in the interior. **Mombasa**, on an island to the north of Zanzibar, is a place of considerable importance. On the high land to the north is the mission station of *Ribe*.

BRITISH POSSESSIONS IN AFRICA.

The British possessions in Africa include those on the West Coast, those in Southern Africa, and the islands of Ascension, St. Helena, and Mauritius.

West African Settlements.

Our West African Settlements include Gambia, Sierra Leone, the Gold Coast, and Lagos.

Gambia.—The river Gambia empties itself into the Atlantic, about 13° north of the equator, after a course of 600 miles. The estuary is very wide, measuring in some places 27 miles across, but between Bathurst and Barra Point it is contracted to little more than two miles. The British settlements extend along the river at intervals for a distance of 300 miles. *Bathurst* stands on an island at the mouth of the river; about 20 miles up the stream is *Fort James*, and at a distance of 200 miles from the coast is *Fort George;* still farther up the river is *Pisania.* The climate is very unhealthy for five months in the year, and, in the interior especially, very hot. The chief exports are ground nuts, palm-oil, bees-wax, ivory, and gold dust.

The *ground nut* is the produce of a plant something similar to our common field-pea, but it has this peculiarity, that the pod is pushed into the soil and there ripens. The "nuts" are about the size of a grey pea, and have much the same flavour. In Western Africa they constitute a great part of the food of the negroes; but in this country they are chiefly valued on account of the fine oil which is obtained from them. Large quantities are imported for this purpose every year.

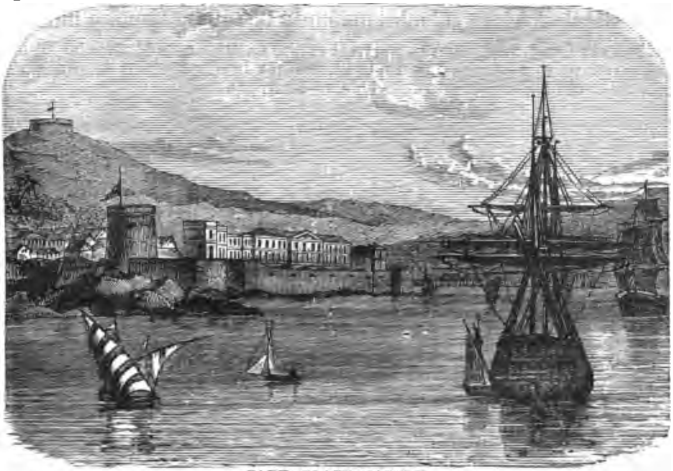
The population of Gambia is about 14,000. The government is vested in an administrator subordinate to the Governor of Sierra Leone, who is assisted by a Legislative Council.

Sierra Leone consists of a peninsula at the mouth of the Rokelle or Sierra Leone river. It has an area of 468 square miles, with a population of 37,000, of whom only about 130 are whites. The climate is hot, humid, and unhealthy, especially from May to November. Tropical fruits grow luxuriantly. The chief exports are teak, palm-oil, ground nuts, ginger, cocoa nuts, and bennie seeds.

Bennie seed, or Sesamum seed, is the fruit of a plant which thrives everywhere in the tropics, and is largely cultivated all through India. The seeds are about the size of linseed, and yield a large proportion of clear, sweet oil.

Free Town, the chief settlement in Sierra Leone, is the seat of the central government of our West African Settlements. The Governor is assisted by Executive and Legislative Councils. Sierra Leone includes the *Isles de Los* and the *Sherboro Island*.

The **Gold Coast Colony** extends along the Gulf of Guinea from the river Assini to the river Volta. The chief settlements are, taking them in order from west to east, Appollonia, Axim, Dixcove, Elmina, Cape Coast Castle, James Town, Accra, and Ada. The surface consists for the most part of flat grassy plains, backed by thick woods. The shore is low and sandy, and exposed to a violent surf. The total area of the colony is about 14,000 square miles, and the population 400,000. The chief exports are palm-oil, gold dust, ivory, gum, and monkey skins. The Gold Coast was erected into a separate colony in September 1874. *Cape Coast Castle* is the present seat of Government, but it is proposed to transfer it to *Accra*.



CAPE COAST CASTLE.

Lagos.—The island of Lagos was purchased from its native chief in 1861, and Great Britain now possesses the adjacent territory, including Badagry and other towns. Palm-oil is the chief article exported, but cotton and indigo grow freely.

The possession of Lagos was necessary for the complete suppression of slavery on the West Coast of Africa, and also for developing our commerce with this part of the Continent. There is now a good road from Lagos to Rabba, on the Niger, distant 250 miles, and a bi-weekly post between the places. The government of Lagos is vested in an administrator, who is subordinate to the Governor of the Gold Coast. The population of Lagos is about 62,000.

South African Possessions.

Extent.—Speaking generally, our possessions in South Africa are bounded on the north by the Orange river; on the west by the Atlantic; and on the south and east by the Indian Ocean. In this district are the colonies of the Cape, Natal, and Griqualand. Adjacent to these, and in some measure connected with them, are the Orange Free State and Transvaal Territory. Exclusive of these states, the area of our South African colonies amounts to 250,000 square miles.

Basuto Land, which lies to the west of the Quathlamba Mountains, was annexed to Cape Colony in 1871; and it has been proposed to annex a considerable portion, if not the whole, of Kaffraria.

CAPE TOWN AND TABLE BAY.

Coast Line.—The west coast of the colony, from the mouth of the Orange river to St. Helena Bay, is not well known, but is supposed to be sandy and barren, and almost destitute of harbours. **St. Helena Bay** is capacious but exposed; **Saldanha Bay** is well sheltered. **Table Bay**, on which Cape Town stands, is a large and safe harbour, except during the summer months, when it is exposed to a heavy swell from the north-west; it is strongly defended. Now rounding the peninsula which terminates in the **Cape of Good Hope**, we enter **False Bay**, the interior portion of which is **Simons Bay**. Simons Town is the chief naval station of the colony. The coast continues to run south until we reach **Cape Agulhas**, the most southerly point in Africa. The coast, which is now bold and rocky, runs eastward as far as Algoa Bay; but before reaching this spacious inlet we pass in succession St. Sebastian Bay, Mossel Bay, and St. Francis Bay. From **Algoa Bay** the coast runs to the north-east, and there is no inlet of any importance until we reach **Port Natal**, which was discovered by Vasco di Gama, on Christmas Day, 1497. The distance from Cape Town to D'Urban on Port Natal is 1000 miles; and the total length of coast-line belonging to our South African colonies is about 1500 miles.

To the north of the colony of Natal is Delagoa Bay, which is the natural outlet for the Transvaal Territory. In view of a possible future confederation of the states of South Africa under the protection of Great Britain, this country some time ago laid claim to Delagoa Bay This claim was resisted by Portugal, and the dispute was referred to Marshal M'Mahon, President of the French Republic. After careful consideration, he decided in favour of the Portuguese.

SURFACE.—The surface of South Africa rises in terraces from the sea coast to the high lands of the interior. These terraces are separated from each other by ranges of mountains which increase in elevation as they recede from the coast. We have first the coast range, which, under various names, may be traced from the mouth of the Orange river to the neighbourhood of False Bay, and then eastward to Algoa Bay. In the west it is known under the names of **Karree Berge** and **Oliphant Berge**; in the south as **Lange Berge** and **Outeniqua Mountains**. This range in the west averages about 4000 ft., but decreases in elevation as it runs eastward. Parallel to the coast-chain is a second range, which is about 1000 ft. higher. In the west it is known as the **Bokkeveldt**, and in the south as the **Zwarte Bergen** (*Black Mountains*). Crossing the third terrace, we meet with the main chain in the colony. The other two chains gradually decline in elevation as they run eastward, and are lost on the east coast; but the third range is a well-defined chain on the west, south, and east. That portion which is parallel to the Bokkeveldt is known as the **Roggeveldt**; parallel with the Zwarte Bergen, we have the **Nieuveldt**, which further east is called the **Sneeuw Bergen** (*Snowy Mountains*). Here **Mount Compass**, the culminating point in the colony, reaches a height of 10,000 ft. At this point the range splits in two: the **Great Winterberge** continues the eastward direction, and runs to the banks of the Kai river; the other branch runs north-east under the names of **Storm Mountains**, and **Quathlamba** or **Drakenbergen**. The Drakenbergen almost rivals the Snowy Mountains in elevation.

The first terrace, between the coast range and the sea, is narrow but well watered, especially on the south, and produces corn and wine. The second terrace is covered for the most part with pasture. The third, called the *Great Karroo*, has an elevation of about 3000 ft., and suffers from droughts. It is crossed by many beds of rivers, but except immediately after rain the streams are a mere succession of pools. In summer the scanty vegetation is burnt up, and the Karroo is almost impassable by man; but in early spring, after the fall of rain, the ground is covered with vegetation, and in a few days "millions of flowers of the most brilliant hues enamel the earth." North of the main chain of mountains, the country slopes down to the Orange river, and is of much the same character as the Great Karroo. The coast district between the Drakenbergen and the sea is well watered and fertile; but the terraces on the west are arid and barren.

MINERALS.—The chief minerals are diamonds, gold, iron, copper ore, and coal. **Gold** and **diamonds** are found in the colony of Griqualand; **coal** and **copper** in Natal. Copper is also very abundant in Namaqualand, near the mouth of the Orange river. The soil of the Great Karroo is strongly impregnated with iron.

CLIMATE.—As the whole of our South African possessions lie within 35° of the equator, we might expect a warm climate. The average annual temperature at Cape Town is 60°, or ten degrees higher than the average in England. In Natal it is still warmer, and the temperature is said to average 67°. The great drawback to the climate in Cape Colony is the irregularity of the rains. In some tracts bordering on the Great Karroo, there has occasionally been no rain for two or three years, while at other times it will fall in torrents. Upon the whole there is a deficiency of rain, except in the eastern districts. But in all parts the climate is remarkably healthy; and invalids often come from India to the Cape to recruit their health.

Rivers.—Owing to the irregular and scanty rains this part of Africa is deficient in rivers. If we were to judge from the map only, we should think the country well watered, but many of the streams are streams only during the rainy season, or immediately after; during the dry season they are little more than a succession of pools. Very few are navigable to any extent, and most of them have bars or other obstructions at their mouths; and as they generally flow in deep channels they are not of much use for purposes of irrigation. The Orange river is by far the largest; and besides it we may mention the Oliphant, Breede, Gauritz, Gamtoos, Sunday, Great Fish river, the Great Kai, St. Johns, and Tugela.

The **Orange River** is formed by the union of two branches, known respectively as the **Nu Gariep** and the Ky Gariep, or **Vaal**. Both these streams rise on the west slope of the Drakenbergen, and after surrounding the Orange River Settlement unite, in the colony of Griqualand West, and flow westward. The chief feeders are the Ongar and Hartebeest, on the left; and the Great Fish river on the right. The total length of the Orange river is about 1000 miles. The **Oliphant**, or Elephant, drains a considerable portion of the Bokkeveldt Karroo, and empties itself on the west coast. Clan William is the chief town upon it. The **Breede**, or Broad river, rises in the Great Karroo, and, after breaking through the mountains, flows in a general direction to the south-east and empties itself into St. Sebastian Bay. The chief places upon it are Worcester, Robertson, Zwellendam, and Port Beaufort. It is navigable by small craft for about 30 miles. The **Gauritz**, a much larger river, rises in the Nieuveldt and flows south. It is joined on the left bank by the Oliphant, and on the right by the Groote. In the rainy season it is a large and rapid river, but in summer its current is weak and sluggish, and the bar across its mouth is then generally dry. The **Gamtoos** rises to the north of the Nieuveldt and empties itself into St. Francis' Bay. The **Sunday River** rises in the Sneeuwbergen and flows at first south and then east, emptying itself into Algoa Bay. Graaff Reynet stands near its source. The **Great Fish River** rises in the Storm Mountains, and flowing south, past Cradock, bursts through the Winterbergen. Continuing its course to the south it receives the Little Fish, on which stands Somerset, and then turns to the east; it then again turns to the south and empties itself below Newcastle. The **Great Kai** is formed by two streams known respectively as the White Kai and the Black Kai; the united stream flows to the south-east. The **St. John's** rises in Natal and drains the eastern half of the district called Kaffraria. The **Tugela**, an important stream, forms the northern boundary of Natal.

Vegetation.—The native vegetation of Cape Colony is characterised by plants with thick fleshy leaves, flowers of brilliant colour, and heaths of great number and variety. In the arid districts of the west we find the stapelia, with its leafless stems and flowers like the star-fish. In the eastern part of the colony are extensive thickets, called "bush," where acacias, aloes, and various plants of the cactus tribe are met with. Among plants more generally diffused throughout the colony, besides the heaths, are innumerable species of the geranium, iris, gladiola, and various orchids. There are also more than 100 species of the **house-leek** tribe, and about 400 species of **heath**. Green sward is thin and scanty; and the forest trees are neither large nor leafy. In the extreme east of the colony, however, and in Natal, the plains are covered with luxuriant grass, the rivers are fringed with trees, and the mountains are clothed with useful timber, including iron-wood, yellow-wood, palms, and pines.

ANIMALS.—The wild animals of the Cape are numerous and large, and include the elephant, rhinoceros, hippopotamus, lion, leopard, hyena, jackal, zebra, buffalo, and antelope. But many of these are rarely met with in the settled parts. The rhinoceros is nearly extirpated; the hippopotamus is only found in the Great Fish and Great Kai rivers. The buffalo is a formidable animal, and has never hitherto been tamed. **Antelopes** of all kinds are exceedingly numerous in the northern part of the colony and often appear in immense herds. Seventy species of antelope are described as belonging to the African Continent, and most of these are found south of the Orange river; in bulk they vary from the size of a hare to the eland, which is larger than a horse. In the Great Karoo and in the country to the north, the **ostrich** is occasionally met with in large flocks. Among other birds may be mentioned pelicans, flamingoes, cranes, eagles, and vultures. Small birds are numerous and beautiful but deficient in song. The **honey-bird** is peculiar to South Africa, and represents the humming-bird of America. Reptiles are numerous, including the boa and deadly cobra, Some rivers are well stocked with fish, but this is not generally the case, probably owing to the fact that the streams are nearly dried up in the hot season.

HISTORY.—The original inhabitants of this part of the African continent seem to have belonged to two races: the **Hottentots** in the west, and the **Kaffirs** in the east. Both seem to belong to the Negro type, but the Kaffirs are much superior both in physical and mental characteristics. The

Dutch effected a settlement in the neighbourhood of the Cape in 1650, and gradually spread over the adjacent country as far as the Nieuveldt. Towards the close of the last century the colony was seized by England, and the British title to it was recognised in 1815. After the passing of the Emancipation Bill (1834) many of the Dutch settlers who had Hottentot slaves were dissatisfied with the amount of compensation offered to them by the English government, and migrated with their families across the Drakenbergen into the district now known as Natal. Here they set up an independent government, which Britain refused to acknowledge, and Natal was made a British colony in 1845. A second migration now took place, and the Orange State and Transvaal Republics were established. It has recently been proposed to unite these states with the British colonies, and thus form a South African Confederation similar to the Dominion of Canada. The Transvaal has been already annexed.

Cape Colony is bounded on the north by the Orange river, on the west by the Atlantic, on the south by the Indian Ocean, and on the east by the Great Kai, the Quathlamba Mountains, and Natal. Its area is about 208,000 square miles, and the population nearly 700,000, of whom the whites number about 200,000. One-third of the remainder are Hottentots, the rest Kaffirs. Owing to the irregularity of the rains the colony is better suited for pasture than for agriculture, and immense numbers of sheep and oxen are reared. The native breed of sheep is very inferior, but it has been improved by crosses with the merino, and **wool** is now the staple export of the colony. The crop lands are chiefly situated in the districts of the Cape, Stellenbosch, and Worcester, in the western part of the colony, and in Albany in the eastern division: the chief grains cultivated are wheat and maize, oats and barley. The **vine** has been successfully cultivated in the neighbourhood of the Cape, and the town of Constantia, about eight miles south of Cape Town, is celebrated for its wine.

A new branch of industry—that of ostrich-farming—has of late years been introduced at Graaff Reynet and other places. A large extent of bush land is fenced in, over which the birds roam peaceably in ordinary times, but in the breeding-season the pairs select one of the several small camps laid out for that purpose. They are fierce and savage at this period, but at all others, as tame as a flock of sheep; and assemble to be fed at bugle-call. The plucking of the birds is a dangerous occupation. They are enticed by the bugle into a small enclosure, where they are packed as closely as possible, to prevent them giving those terrible kicks which are sometimes of force sufficient to break a man's leg. A well-stocked and carefully tended farm yields a large profit.

The colony is at present deficient in internal communication, but several good roads have been made, and the railway system is being rapidly extended. The principal exports are wool, copper ore, hides, horns, ivory, ostrich feathers, and diamonds. The government is modelled upon that of England: there is a governor appointed by the crown, and two elected chambers—the Legislative Council of 21 members, and the House of Assembly with 68 members. The chief towns are Cape Town, Grahamstown, Wellington, Zwellendam, George Town, Beaufort, Graaff Reynet, Colesberg, Uitenhage, Port Elizabeth, and Williamstown.

Cape Town, the capital of the colony, stands at the foot of Table Mountain and on the shores of Table Bay. Its streets are wide and straight, several of its squares good, and it has a busy and cheerful appearance; the neighbourhood is very picturesque. The population is about 30,000, two-thirds of whom are whites. **Grahamstown** is the chief place in the eastern division of the colony. Grahamstown, as well as Cape Town, is the seat of a colonial bishop.

Natal is bounded on the south by the river Umtamfuna, on the north by the Tugela, on the west by the Drakenbergen, and on the east by the ocean. It has an area of 16,150 miles, and a population of nearly 300,000, of whom less than 20,000 are whites. The country rises from the shore in four successive terraces, each having its peculiar climate and productions. The coast region has a climate almost tropical, though perfectly healthy. Sugar, coffee, indigo, arrowroot, ginger, tobacco, and cotton, thrive well; and the pine apple ripens in the open air. The second is well grassed; the third is in many parts thickly timbered, and produces the fruits of southern Europe; the fourth is suitable for wheat and other crops of Central Europe. Coal, copper ore, and iron, have been found in several parts of the colony; and it is believed that the Drakenbergen is rich in mineral wealth. Large forests of valuable timber abound in the "kloofs," or gorges, of the mountains. Natal is well watered, but none of the streams are navigable. Port Natal is its only great harbour, and its entrance is obstructed by a bar. The chief exports are sugar, arrowroot, hides, ivory, wool, and cotton. The chief towns are *Pietermaritzburg*, the capital; and *D'Urban*, the chief port. The government consists of a Lieutenant-governor, an Executive Council, and a Legislative Council.

Griqualand West was erected into a colony in Feb. 1873. It lies in the north side of the Nu Gariep, near its junction with the Vaal, and was so named to distinguish it from Griqualand East, which now forms a part of the Orange Free State. The area is about 17,800 square miles, and the population 50,000. Copper, lead, iron, and coal are said to have been found, but the wealth of the colony mainly consists in its **diamonds.** The climate is naturally healthy, as the general elevation of the country, 3000 or 4000 ft. above the sea, diminishes the temperature; and there is good grazing land. The colony has a constitution similar to that of Natal. The capital is *Kimberley.*

The **Orange Free State** has an area of 70,000 square miles, with a population of about 35,000, two-thirds of whom are white men of Dutch extraction. Diamonds, garnets, and other precious stones have been found in considerable quantities, but agriculture is the chief employment. The government is a republic, and *Bloemfontein* is the capital.

The **Transvaal Republic** was established in 1840, and recognised by England in 1852. It includes all the country between the Vaal and the Limpopo. Its chief towns are *Potchefstroom* and *Pretoria*, the latter being the seat of government. Gold has recently been discovered about 200 miles north of Pretoria, and coal, copper, lead, and iron are said to be very abundant. It was annexed to the British Empire in 1877.

ISLANDS.

The islands of Africa belonging to Great Britain are Ascension, St. Helena, and Mauritius.

Ascension is a small rocky island of volcanic origin in the South Atlantic. It is situated about 8° south of the equator, and 14° west of Greenwich; it has an area of 34 square miles, with a population of 500. The island was discovered by the Portuguese on Ascension Day, 1508, but remained uninhabited until 1815, when the English took possession of it for the purpose of making it a victualling station and hospital for the use of the squadron stationed on the West Coast of Africa. Among the indigenous productions are the tomato, castor-oil plant, and pepper; it is also famous for its turtles. The island is in the charge of the Board of Admiralty, by whom a naval officer is appointed as governor. *Georgetown,* the seat of government, stands on the west side of the island.

St. Helena lies about 800 miles south-east of Ascension, and 1200 miles from the nearest point of the African continent. The island is an irregular oblong in form, has an area of 47 square miles, and a population of 6200. The climate, which averages about 61°, is healthy, the soil fertile, and spring water abundant. It is visited by homeward bound vessels for the purpose of obtaining fresh provisions and water, and this constitutes the chief trade of the island. The governor resides at *Jamestown*, on the north-west coast.

Napoleon was imprisoned at St. Helena for six years, and died there in 1821; his body was removed to Paris in 1840. A bishop was established at St. Helena in 1859, and his diocese includes Ascension and *Tristan d'Acunha*. The latter is a small group of islands lying 1750 miles south-west of the Cape of Good Hope.

Mauritius.—This island lies in the Indian Ocean, about 20° south of the equator, and 500 miles east of Madagascar. It is nearly oval in form, and has an area of 708 square miles. The island is in great part volcanic, and its coasts are fringed with extensive coral reefs, pierced in some places by the mouths of the streams. The surface is diversified, and in the south-west reaches an elevation of nearly 3000 ft. The climate is hot, averaging about 78°, and the chief products of the island are sugar and rum. Mauritius has belonged successively to the Dutch and French, from whom it was taken by the English in 1810, and our possession of it was ratified by the Treaty of Vienna in 1815. The population in 1871 was 316,000, of whom about 154,000 were natives of Hindostan, who had been imported as coolies to work in the sugar plantations. The white inhabitants are mostly of French descent. The imports consist mainly of rice, grain, and cotton manufactures for the coolies; the exports are chiefly sugar and rum, with cotton, indigo, tortoise-shell, ebony, and iron-wood in smaller quantities. There is a Governor assisted by an Executive Council of five members, and a Legislative Council of twenty members. The capital, *Port Louis*, on the north-west side of the island, has a population of 65,000.

The government of Mauritius includes, as dependencies, the Seychelles group, the Amirante islands, Rodrigues, and a number of other smaller islands, about 60 in number. The **Seychelles** lie about 1000 miles north of Mauritius, and compose a group of about 30 islands, of which Mahé, on which stands *Port Victoria*, is the largest. The **Amirantes** lie to the south-west of the Seychelles. **Rodrigues** lies about 300 miles to the east of the Mauritius, and has an area of nearly 200 square miles.

MADAGASCAR.

THE large island of Madagascar is separated from the mainland by the Mozambique Channel, which, in its narrowest part, is 240 miles wide. The length of the island, from *Cape Amber* to *Cape St. Mary*, is 980 miles; its greatest breadth is 360 miles; and its total area is 228,600 square miles. A range of mountains thickly clothed with forests runs from north to south, and in the summit of *Ankaratra* reaches an elevation of nearly 9000 ft. A low plain which runs round the coast is unhealthy, but in the interior it is quite salubrious. The soil is fertile, and the forests abound with valuable trees and medicinal plants. Other products are rice, sugar, silk, cotton, indigo, pepper, bananas, and cocoa-nuts. Iron is abundant, and gold, silver, lead, copper, and coal are met with.

The population is about 3,000,000. The inhabitants, called *Malagasy*, seem to belong to two races, allied to the Negro and Malay races respectively. Rice is the chief article of cultivation, and the chief manufactures are those of jewellery, chains, necklaces, carpets, and cotton fabrics. **Tananarivo**, on a high plateau in the interior, is the capital, and has a population of 80,000. **Tamatave**, on the east coast, is the principal port. **Antongil Bay**, further north, is a great resort for vessels engaged in the whale fishery. Christianity is now the established religion in Madagascar. Printing has been introduced by the missionaries, and there are numerous schools. The French possess the island of *Nossi-Bé*, and one or two other small settlements on the west coast.

NORTH AMERICA.

GENERAL DESCRIPTION.

Boundaries and Extent.—The continent of North America is bounded on the west by the Pacific; on the north by the Arctic Ocean, and on the east by the Atlantic, the Gulf of Mexico, and the Caribbean Sea. Its extreme length, from Point Barrow to the Isthmus of Panama, is about 5600 miles; its greatest breadth, occurring about the 51st parallel of north latitude, is about 3000 miles, and its total area has been estimated at 9,000,000 square miles.

The most northerly point in the continent is **Murchison Promontory**, in the peninsula of Boothia, in the parallel of 72° north; its most southerly point is **Cape Mariato**, in the isthmus of Panama. **Cape Charles**, in Labrador (55° 40′ west), is the most easterly point, and **Cape Prince of Wales**, in Behring Strait (lon. 168° west), is the most westerly point. The Isthmus of Panama, which connects North and South America, is only about 30 miles across.

Countries.—The following is a list of the countries of North America, with the area, population, and capital of each state:—

Countries.	Area in Sq. Miles.	Population.	Capital.
Greenland, - - -	800,000	10,000	Julianshaab.
British America, -	3,600,000	4,000,000	Ottawa.
United States, - -	3,600,000	38,600,000	Washington.
Mexico, - - - -	740,000	9,000,000	Mexico.
Guatemala, - - -	40,000	1,200,000	New Guatemala.
Honduras, - - -	47,000	350,000	Comayagua.
San Salvador, - -	7,300	600,000	San Salvador.
Nicaragua, - - -	58,000	250,000	Managua.
Costa Rica, - - -	21,000	185,000	San José.
West Indies, - -	95,000	4,000,000	Havana.

Coast-Line.—Speaking generally, the northern shore of the American continent coincides with the parallel of 70°; but it is prolonged almost to the pole, by a number of large

ARCTIC OCEAN
GREENLAND
ASIA
PACIFIC
Alaska
(United States Territory)
DOMINION OF CANADA
BAFFIN SEA
Baffin Land
DAVIS STRAIT
Hudson Strait
HUDSON BAY
Labrador
East Main
James Bay
Melville Sound
Prince Patrick
Parry Isles
Banks Land
Pr. Albert Land
Victoria
Boothia
Fox Channel
Southampton I.
Great Bear Lake
Great Slave L.
BRITISH COLUMBIA
Saskatchawan
Lake Winnipeg
ONTARIO
QUEBEC
Quebec
Montreal
Ottawa
Lake Superior
Newfoundland
Anticosti
Gulf of St. Lawrence
Halifax
Toronto
Boston
Portland
Vancouver I.
Qn. Charlotte Is.
Washington
Oregon
Montana
Dacotah
Minnesota
Wyoming
Mt. St. Elias
Mt. Fairweather
Mt. Hooker
Mt. Brown
Mt. Olympus
Mt. Hood
Juan de Fuca Str.
Alaska Peninsula
Kodiak
Behring Strait
Norton Sd.
C. Farewell
Upernavik
Arctic Circle
Wollaston L.
Deer L.
Hudson Strait
C. Chidley
Port Manvers
Hopedale
Nain
Ellesmere Land
Smith Sd.
Lancaster Sd.
Barrow Pt.
Mansfield I.
Chesterfield Inlet
Wager R.
Ft. Churchill
Port Nelson
York Fort
Ft. Severn
Albany Ft.
Moose
Rupert's Ho.
Red R.
Manitoba
Qu' Appelle R.
L. of the Woods
Three Rivers
Fredericton
Sable I.
C. Sable
C. Cod
Long I.

NORTH AMERICA.
British Miles
Reference to United States.
1 Maine
2 New Hampshire
3 Vermont
4 Massachusetts
5 Rhode Island
6 Connecticut
7 New York
8 New Jersey
9 Pennsylvania
10 Delaware
11 Maryland
12 Ohio
13 Michigan
14 Indiana
15 Illinois
16 Wisconsin
17 Iowa
18 Missouri
19 Kentucky
20 Virginia & West Do.
21 North Carolina
22 South Carolina
23 Tennessee
24 Arkansas
25 Louisiana
26 Mississippi
27 Alabama
28 Georgia
29 Florida
UNITED STATES
ATLANTIC OCEAN
PACIFIC OCEAN
GULF OF MEXICO
CARIBBEAN SEA
MEXICO
CENTRAL AMERICA
SOUTH AMERICA
Bahama Islands
CUBA
HAYTI
Texas
Indian Territory
Nebraska
Colorado
Kanzas
Utah
Nevada
California
Arizona
New Mexico
Wyoming
Lower California
Gulf of California
Honduras
Mosquito
Jamaica
Bay of Honduras
Tropic of Cancer
San Francisco
New Orleans
Charleston
Washington
Vera Cruz
Tampico
Mexico

William Collins. Sons & C°. Publishers.

islands, covered for the greater part of the year with snow and divided from each other by channels which are seldom free from ice. Among these islands are Victoria Land, Banks Land, the Parry Islands, Prince of Wales Land, North Somerset, Baffin Land, North Devon, North Lincoln, Ellesmere Land, Grinnell Land, and Grant Land.

The discovery of the intricate passages which separate these land masses is mainly due to the enterprise of British seamen in their endeavours to discover the North-West Passage. Parry in 1821 succeeded in penetrating from Baffin's Bay to **Melville Island**, and thirty years later Captain M'Clure, entering by Behring Strait, was able to take his vessel to Bank Strait, on the south side of Melville Island. The combined efforts of these navigators thus proved the existence of a passage from Behring Strait to Lancaster Sound, though no vessel has yet succeeded in accomplishing the entire distance. In the opinion of many a more practicable passage is that which Franklin endeavoured to follow in his last voyage. It lies through Lancaster Sound, Barrow Strait, Franklin Strait, and then on the east side of **King William's Land** to the mouth of the Back River. Once there, there would be no difficulty in taking the ship along the coast of North America to Behring Strait. Baffin's Bay, which separates Greenland from the islands of the Arctic Archipelago, is prolonged northward by Smith Sound, Kennedy Channel, and Robeson Channel. The most northerly point of land known at present is **Cape Columbia**, in Grant Land, lat. 83° 7′ north, and lon. 70° west. From that point the coast stretches to the south-west for an unknown distance. The highest latitude yet attained is the spot reached by Commander Markham and his brave companions in lat. 83° 20′ 26″.

The coasts along the shores of Baffin's Bay and Davis Strait, as well as those of Labrador, are generally bold and rocky. As we proceed southward the height of the cliffs diminish, and in the southern part of the United States, and round the Gulf of Mexico, the shores are low and sandy and sometimes lined by unhealthy swamps. The chief headlands on the coasts of the States are *Cape Cod* and *Cape Hatteras*. The peninsula of Florida terminates on the south in *Cape Sable*, and this is the name also which is given to the southern termination of Nova Scotia. The Gulf of Mexico is separated from the Caribbean Sea by the peninsula of *Yucatan*. This is one of the few peninsulas which point northward; and like the others which have this direction its shores are low. It terminates on the north-east in *Cape Catoche*.

The **Gulf of Mexico** extends, from east to west, a distance of above 1000 miles, and its greatest breadth is nearly as much. Its shores are low in general, and skirted with flat sandy islands. Its waters are distinguished by their high temperature, being generally eight or ten degrees above that of the neighbouring ocean; and out of the gulf, through the Strait of Florida, flows the **Gulf Stream**, which brings the warmth of the tropics to the coast of Europe. The **Caribbean Sea** is larger than the Mexican

Gulf, and extends east and west for a distance of 1800 miles. It is connected with the Gulf by the *Yucatan Channel*, and communicates with the Atlantic by numerous passages between the smaller islands of the West Indies. Its shores, especially on the south, are high and rocky.

The Pacific coast of North America is upon the whole bold and rugged, as ranges of mountains run through the whole length at no great distance from the sea. In Alaska and British America the coast is much indented, and is skirted with numerous islands. Vancouver Island, the largest of these, belongs to England, and it is separated from American territory by the *Juan de Fuca Strait*. At the entrance to this strait, on the south side, is *Cape Flattery;* further south is *Cape Mendocino*. The peninsula of California runs southward for a distance of about 800 miles, and terminates in *Cape San Lucas*. It encloses the Gulf of California, which has a breadth of about 80 miles. The west coast of Mexico is hot, low, and unhealthy; but in Guatemala the shores are again rocky, and there are some good harbours. The whole length of coast-line belonging to North America has been estimated at 24,500 miles.

SURFACE.—The chief range of mountains in North America is the *Rocky Mountains*, which extend from the shores of the Arctic Ocean as far south as the 30th parallel. In the extreme north these mountains are not more than 1000 or 2000 ft. in elevation, but the chain rapidly increases in height as we follow it southward, until it reaches an average of 7000 ft. The pass across which the Pacific Railway runs is 8400 ft. above the sea-level. **Mount Brown**, in British America, reaches 15,900 ft., and is the highest summit in the whole chain; **Mount Hooker** and **Mount Murchison** are not much less in height. In the United States the highest summits are **Fremont's Peak** and **Long's Peak**, both of which reach an elevation of 13,500 ft. To the east of the Rocky Mountains extends the great plain of North America, which stretches from the Arctic Ocean to the Gulf of Mexico. On the west there is a broad belt of high land crossed by numerous mountain ranges. In the extreme north we have the extensive valley of the Kwichpak or Yukon. In British Columbia the land descends by terraces to the sea, each terrace being supported by a mountain range. Further south we have the broad plateau of Utah extending between the Rocky Mountains and the Cascade Range. The *Cascade Mountains* run along the coast from Alaska to the southern extremity of the peninsula of California, and near their northern extremity rise two summits—**Mount Elias** and **Mount Fairweather**—both of which approach an elevation of 15,000 ft. Other summits further south are not much inferior in height. About the parallel of 42° the Cascade Range splits in two and encloses the valley of the Sacramento. The eastern range is called the *Sierra Nevada,* where **Mount Whitney** is said to reach 14,900 ft.

The **Great Plain** of North America extends eastward from the Rocky Mountains to the Alleghany Mountains, and covers an area of 3,250,000 square miles. About the parallel of 50° there is a ridge of ground, of no great elevation, which forms the watershed between the Mississippi and the Saskatchewan; and from this ridge the country slopes gently to the Gulf of Mexico on the one hand, and to Hudson Bay on the other. The **Alleghany** or *Appalachian* Mountains have no great elevation. They rise from a table-land which stretches in a north-east and south-west direction, from the banks of the St. Lawrence to the source of the Alabama. The plateau has an elevation of from 1000 to 2000 ft., and is traversed by ridges of hills seldom more than 3000 or 4000 ft. high. Between the Alleghanies and the sea is the *Atlantic Plain,* which has a considerable breadth in the south, but narrows towards the north where the mountains run close to the shore.

South of the Rocky Mountains is the plateau of Mexico, which is bounded on the western side by the *Sierra Madre.* Immediately south of the city of Mexico the plateau is crossed from east to west by a range of volcanic summits, which include **Orizaba** and **Popocatepetl**, both of which exceed 17,000 ft., the latter being the highest summit in North America.

The plateau of Mexico is separated from the plateau of Guatemala by the low *Isthmus of Tehuantepec.* Another low plain separates the table-lands of Guatemala and Honduras. Nicaragua consists for the most part of an extensive plain of no great elevation; the surface of the lake is only 125 ft. above the Pacific. Costa Rica, however, is traversed by a range of mountains which is said to attain a height of 9000 ft. The highest point of the *Isthmus of Panama,* on the other hand, is only 299 ft., and the railway traverses it by a tunnel about 40 ft. below this level.

MINERALS.—North America is exceedingly rich in mineral produce. *Gold* is found in British Columbia, California, and Mexico; *silver* in Nevada and Mexico; *coal* in British America and the United States. The coal-fields of the States cover an area which is forty times greater than those of Great Britain. *Iron, copper,* and *lead,* are also abundant in the States, and in British America as well as in Mexico. *Tin* and *quicksilver* are found in Central America, and quicksilver is also very abundant in California. *Salt* abounds in many parts of the Great Plain of North America, as well as in the plateau of Utah. Among the mineral riches of North America, however, there is a singular absence of precious stones of all kinds.

RIVERS AND LAKES.—The surface of a country determines the direction of the rivers. This is well seen in North America, where there are four main slopes. The *Northern Slope* of the Great Central Plain is drained by the Mackenzie, Coppermine, Back River, Churchill, Nelson, and St. Lawrence; the *Southern Slope*, by the Mississippi and Rio Grande; the *Atlantic Slope*, by numerous smaller streams of great commercial importance; and the *Pacific Slope*, by the Yukon, Fraser, Columbia, Sacramento, and Colorado.

The **Nelson** may be looked upon as the lower course of the Saskatchewan. It flows from Lake Winnipeg, which receives the Saskatchewan, the Red River, and other streams. The Fraser, Columbia, and **Colorado** are famous for those rocky defiles called cañons. They are generally found where the rivers break through some mountain chain, such as the Cascade Range, and appear to be entirely due to the eroding force of the water. The great Cañon of Colorado is 300 miles in length, and its sides rise from 1000 ft. to nearly a mile in perpendicular height.

The lakes of North America are generally connected with the rivers. The Athabasca, Great Slave, and Great Bear lakes lie in the basin of the Mackenzie; Lake Winnipeg is drained by the Nelson; and Lakes Superior, Michigan, Huron, Erie, and Ontario by the St. Lawrence. Besides these we may mention Lakes Managua and Nicaragua, in Central America, drained by the San Juan, and the Great Salt Lake, in the desert of Utah.

The **Great Salt Lake** has an area of 1800 miles, and has no outlet: it receives a stream from the smaller **Lake Utah**, the waters of which are fresh.

CLIMATE.—In North America there is every diversity of climate—from the cold of the Arctic Regions to the heat of the tropics. In most parts, however, the temperature is lower than in corresponding latitudes of Europe and Africa. This is owing partly to the shape of the continent—narrow in the south and widening towards the north—and partly to the effect of the Gulf Stream, and the prevalence of south-westerly winds upon the west coast of Europe. The changes of temperature are also more frequent and of greater extent, especially in the United States, than in Europe. In the north-eastern states the thermometer will sometimes vary from 25° to 30° in a single day, while in England the variation seldom exceeds 12°. The western coast is much warmer than the eastern, and the difference between summer and winter is not so great.

All that portion of the continent which lies east of the Rocky Mountains is exposed to the north-east winds, while the east coast, as far south as New York, is washed by a cold polar current. The Pacific coast, on the other hand, is exposed to the influence of the warm south-west winds; hence the mild winters on the Pacific coast. The island of Sitka, in the parallel of 57° north, has an average annual temperature of 45°, while the difference between the summer and winter temperatures is only 21°; while at Portland, on the east coast, which is 13° farther south, the annual temperature is only 1° higher, but the difference between the mean summer and winter temperatures is 45°.

VEGETATION.—A curved line drawn from the mouth of the Mackenzie, through Hudson Bay, to Cape Farewell marks the northern limit of trees; beyond that line the country is covered with short grass, moss, and stunted shrubs. The remainder of British America is clothed with vast forests of black and white spruce, pines, poplars, and other trees, except where the timber has been cleared away either by the Indians or the settlers. A vast forest also extended from the Atlantic to the Mississippi when America was discovered by the Europeans, and though large portions have been cleared, extensive woods still remain, the chief trees being the oak, pine, birch, walnut, cypress, maple, and hickory. South of the parallel of 36° the vegetation is of a semi-tropical character, and a few dwarf palms appear in Florida and Alabama. To the west of the Mississippi stretch extensive *prairies* covered with luxuriant grass, where a tree is scarcely seen, except along the water courses. The Pacific Slope is generally well timbered, and the trees are often of immense size. Mexico and Central America, including also the West India Islands, have a rich flora, and among the valuable forest trees may be mentioned mahogany and logwood. The tobacco plant, maize, yam, and capsicum are indigenous, and the pimento myrtle and the arrowroot plant are said to be natives of the West Indies.

ANIMALS.—In the north the fur-bearing animals are met with, including the beaver, marten, seal, and Arctic fox. Among larger animals may be mentioned bears, wolves, moose-deer, the bison, and the musk-ox. In Central America the jaguar, puma, and tapir are found. In Canada and the

States large flocks of geese, turkeys, and pigeons are met with in a wild state. The *humming-birds*, which are found in all parts of the southern continent, are found in North America as far as the 42nd parallel, and on the west coast, even as far as the coast of Alaska. The rivers of the northern continents abound in fish; and the rattlesnake and other venomous reptiles are met with in the prairies. Neither the elephant nor camel are found in America; and before the time of Columbus, the horse, ox, sheep, and hog were unknown.

POPULATION AND RELIGION.—The population of North America is estimated at 55,000,000, the greater portion of whom are of European descent. The Esquimaux of the north and the native Indians are supposed to be of Mongolian descent. In British America the settlers are chiefly from Great Britain; in the United States there are English, Irish, Dutch, German, French, and Spanish races. In the Southern States there are about 4,000,000 Negroes, and in California a great many Chinese. Negroes are also numerous in the West India Islands. In Mexico and Central America the native Indians are more numerous than elsewhere, but altogether the number of North American Indians does not exceed 4,000,000.

The **Indians** of North America are distinguished by high cheek-bones, a prominent nose, and a large mouth. The skin is generally of a red or copper colour, varying, however, from a deep bronze to a light brown. The eyes are black and the hair black and scanty. The race is active and vigilant in its habits, but incapable of long endurance. The Indian is daring and cruel, yet generous and hospitable. He is of a cold and melancholy temperament, and sometimes exhibits a remarkable insensibility to pain. In Canada and the States some of the native tribes have attained a certain degree of civilization, and are employed in tilling the ground, or in breeding cattle and horses; but they are rapidly decreasing in numbers.

The Esquimaux and the native Indians are for the most part idolaters, though some of the tribes have been converted to Christianity. In British America, except in the province of Quebec, the settlers are chiefly Protestants. In the United States all forms of Christianity have numerous followers. In Mexico and Central America the Roman Catholic religion prevails.

GREENLAND.

THE large extent of country called Greenland is supposed to be an island or an assemblage of islands. It stretches from Cape Farewell to about the 83rd parallel north, and the entire area is estimated at 800,000 square miles. The west coast was traced by the recent Arctic Expedition (1876) as far north as 82° 18′, and land was seen extending to 82° 54′, but how far the eastern coast stretches northward is not known. The coasts are skirted with rocky islands, and indented with deep fiords, some of which extend about 100 miles inland. These inlets are bounded by walls of rock sometimes 2000 ft. in height, and they generally terminate in glaciers. Nothing is known of the interior, as the inhospitable character of the surface and climate has hitherto prevented exploration. July is the only month without snow, but in the short summer the heat is sometimes oppressive.

On the west coast Danish settlers and Moravian missionaries have formed settlements on the islands and at the mouths of the fiords; and here there are narrow strips of meadow land and a few stunted trees, such as the willow, beech, and juniper. Coal is found in the island of Disco, and is of great use to steamers engaged either in the whale fishery or in Arctic exploration. The chief settlement is **Julianshaab**, to the west of Cape Farewell. **Uppernavik**, the limit of the Danish settlements towards the pole, is considered the most northerly town in the world. The total population of the various Danish settlements is about 10,000, comprising about 300 Danish settlers. Tribes of Esquimaux, however, inhabit the west coast as far north as the parallel of 82°. They subsist on fish, waterfowl, and the larger kind of game, such as the musk-ox and reindeer, which are met with even in those inhospitable regions.

Greenland is said to have been discovered by an Icelander about the commencement of the tenth century, and as it was spring time when discovered, the mainland, in the neighbourhood of Cape Farewell, was covered with verdure, hence the country received its present name. Settlements were established shortly afterwards, and they seem to have extended along the west coast as far north as Disco. For several centuries an intercourse was kept up with Europe, Christianity was introduced, and Greenland had its own bishop. But about the beginning of the fifteenth century these colonies, from some cause or other, entirely disappear from history, and the country was almost forgotten until rediscovered by Davis in 1587. The present Danish settlements date from the commencement of the eighteenth century.

BRITISH NORTH AMERICA.

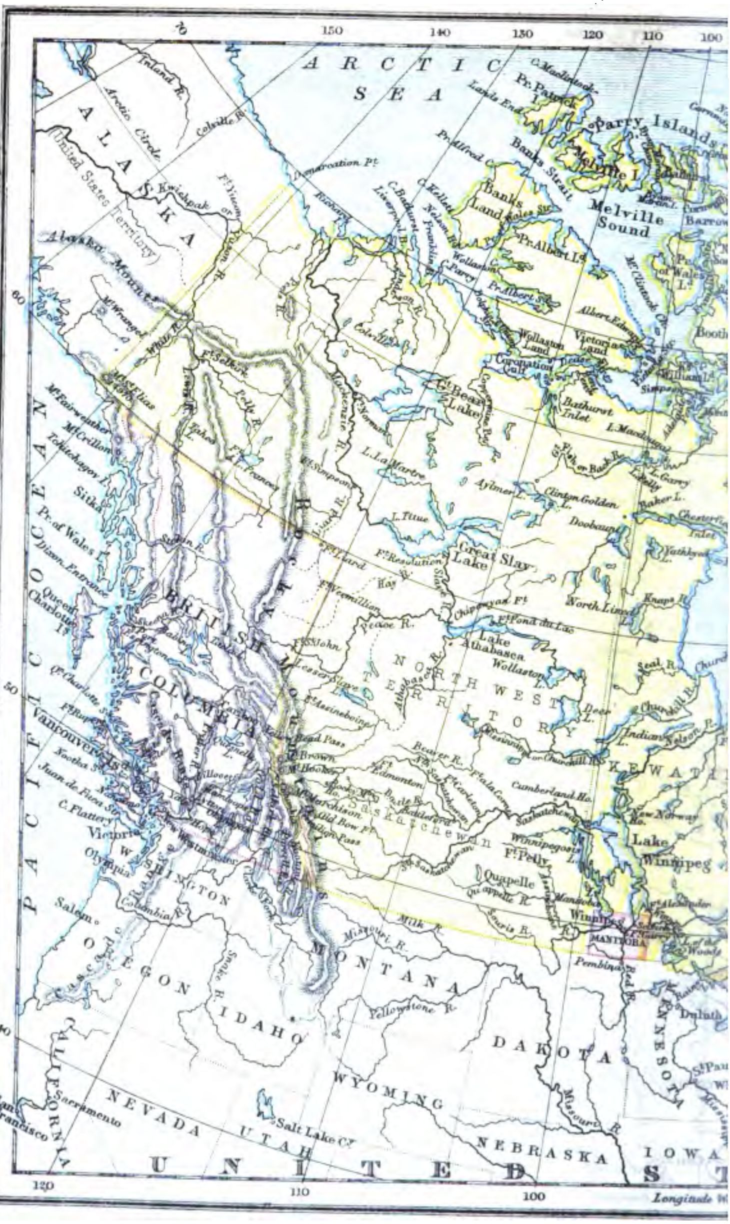
British North America embraces the whole of the continent north of the 49th parallel and the basin of the great lakes, with the exception of a district on the north-west, called Alaska, which belongs to the United States; and the whole of this vast area, with the exception of Labrador and the island of Newfoundland, is now included in the Dominion of Canada.

Dominion of Canada.

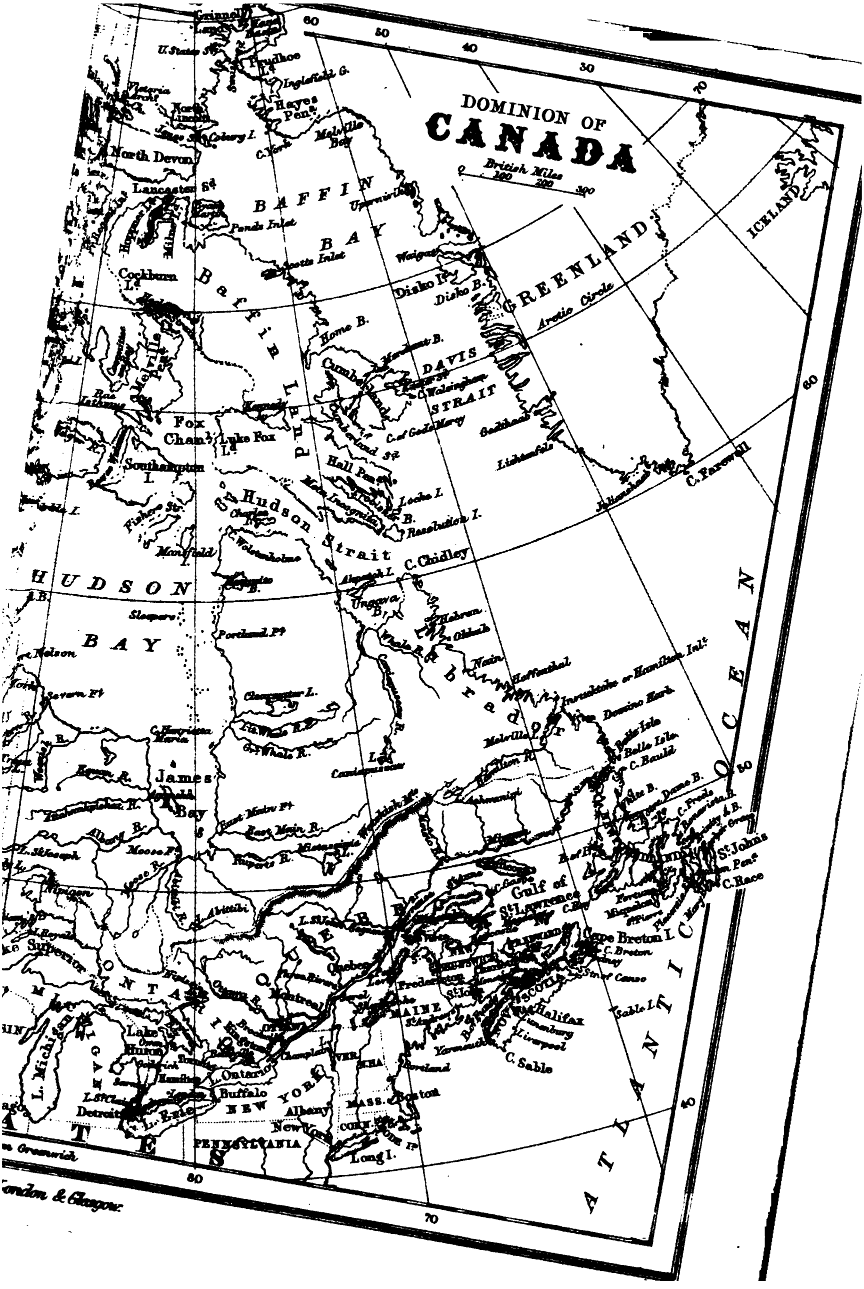
Extent.—The Dominion is bounded on the east by the Atlantic, Davis Straits, and Baffin's Bay; on the north by the Arctic Ocean; on the west by Alaska and the Pacific; and on the south by the 49th parallel of north latitude, the great lakes, and the Northern States of the Union. The whole area exceeds 3,600,000 square miles, but a large portion of it is rendered unfit for colonization by the severity of the climate.

Coast-Line.—The **Bay of Fundy**, which separates Nova Scotia from New Brunswick, is famous for its high tides, which sometimes reach the height of 75 feet. **Cape Sable** terminates the peninsula of Nova Scotia on the south, and **Cape Canso** is the northern extremity. The shores of the Gulf of St. Lawrence are generally barren and precipitous. Passing the island of **Anticosti**, we sail through the **Straits of Belle Isle** between Newfoundland and the mainland; a strong current which sets through the strait, meeting the current of the St. Lawrence, makes navigation in these parts rather dangerous. From **Cape Charles to Cape Chudleigh** stretches the coast of Labrador, which is barren and rocky. The Moravian missionaries have some settlements at Nain and other places, but the inhabitants are not numerous. We now turn westward through **Hudson Strait**, leaving **Fobisher Bay** on the right, and **Ungava Bay** on the left hand, and enter **Hudson Bay**.

This large inland sea has an area of nearly 300,000 square miles. It is full of sand banks, reefs, and islands, and contains but few fish. Its shores are rocky and barren. On the west coast is Fort York, and some other settlements belonging to the Hudson Bay Company. The bay was discovered in 1610 by Henry Hudson, who, the previous year, had discovered the river Hudson on which New York stands. His fate was a


ARCTIC SEA
ALASKA
United States Territory
Arctic Circle
Inland R.
Colville R.
Demarcation Pt.
Alaska Mounts.
Mt. Wrangel
White R.
Mt. St. Elias
Mt. Fairweather
Mt. Crillon
Sitka
Pr. of Wales I.
Dixon Entrance
Queen Charlotte Is.
PACIFIC OCEAN
BRITISH COLUMBIA
ROCKY MOUNTAINS
Vancouver Is.
Juan de Fuca Str.
C. Flattery
Victoria
Olympia
WASHINGTON
Salem
OREGON
Cascade
Columbia R.
IDAHO
MONTANA
CALIFORNIA
Sacramento
San Francisco
NEVADA
UTAH
Salt Lake Cy.
WYOMING
NEBRASKA
DAKOTA
IOWA
MINNESOTA
Duluth
UNITED ST
Yellowstone R.
Missouri R.
Milk R.
Snake R.
Ft. Selkirk
Pelly R.
Ft. Simpson
Mackenzie R.
Ft. Norman
Gt. Bear Lake
Great Slave Lake
Ft. Resolution
Ft. Liard
Ft. Vermillion
Peace R.
Ft. St. John
Lesser Slave
Ft. Chipewyan
Lake Athabasca
Wollaston L.
NORTH WEST TERRITORY
Ft. Edmonton
Saskatchewan
Cumberland Ho.
Lake Winnipegosis
Lake Winnipeg
Ft. Pelly
Qu'appelle
Winnipeg
MANITOBA
Pembina
Red R.
Souris R.
Norway Ho.
Nelson R.
Churchill R.
Deer L.
Indian L.
North Lined L.
Doobaunt L.
Aylmer L.
Clinton Golden L.
Baker L.
Chesterfield Inlet
Bathurst Inlet
Coronation Gulf
Wollaston Land
Victoria Land
Pr. Albert Ld.
Pr. Albert Sd.
Banks Land
Banks Strait
Melville I.
Melville Sound
Parry Islands
Pr. Patrick I.
Lands End
Pr. Alfred C.
C. Kellett
C. Bathurst
Franklin B.
Liverpool B.
Anderson R.
Coppermine R.
L. La Martre
Albert Edward B.
Simpson Str.
Liard R.
Stikine R.
Fraser R.
Ft. Hope
New Westminster
Ft. Rupert
Nootka Sd.
Yellow Head Pass
Mt. Brown
Mt. Hooker
Mt. Murchison
Bow R.
Ft. Carlton
Battleford
Ft. Assineboine
150
140
130
120
110
100
70
60
50
40
Longitude W

William Collins S


DOMINION OF
CANADA
British Miles
0 100 200 300
BAFFIN BAY
Baffin Land
GREENLAND
ICELAND
Arctic Circle
DAVIS STRAIT
HUDSON BAY
Hudson Strait
James Bay
Labrador
Gulf of St. Lawrence
ATLANTIC OCEAN
North Devon
Lancaster Sd.
Cockburn I.
Fox Chan.
Luke Fox I.
Southampton I.
Melville Pen.
Disko I.
Disko B.
Home B.
Cumberland Sd.
Hall Pen.
Resolution I.
C. Chidley
Ungava B.
C. Farewell
Hebron
Nain
Belle Isle
C. Bauld
Cape Breton I.
St. Johns
C. Race
Halifax
Liverpool
C. Sable
Quebec
Montreal
Fredericton
St. John
MAINE
Portland
Boston
MASS.
NEW YORK
Albany
New York
Long I.
PENNSYLVANIA
Buffalo
L. Ontario
L. Erie
Detroit
L. Michigan
Lake Huron
Lake Superior
ONTARIO
QUEBEC
Kingston
Ottawa R.
Prudhoe
Hayes Pen.
Melville Bay
Upernivik
Grinnell Land
C. Henrietta Maria
Severn R.
Albany R.
Moose R.
Abittibi
East Main R.
Rupert R.
Hamilton R.
Port Nelson
Sable I.
Str. of Canso
Greenwich
80
70
60
50
40
30
London & Glasgow

melancholy one. After spending a winter on the shores of the newly discovered bay, during which he and his companions endured great privations, on preparing to return to England, his crew mutinied. Seizing Hudson and his son, together with some others who were disabled with sickness, the mutineers turned them adrift in an open boat with only a small stock of provisions, a single gun, and a little ammunition. Nothing farther was ever heard of the brave English explorer.

Leaving Hudson Bay, we pass through **Fox Channel**, and **Hecla** and **Fury Strait**, and enter the **Gulf of Boothia**. Turning north we pass through **Bellot Strait** between Boothia and North Somerset, and enter **Franklin Strait**. On the western side of Boothia, in lat. 70° north, is the *Magnetic Pole*. To the south lies **King William Land**, where M'Clintock discovered the relics of the Franklin expedition (1859). We now reach the mouth of the Back River, and turning to the west, follow the north coast of the continent through **Dease Strait** and **Coronation Gulf**, and, passing on, we round **Cape Bathurst**, and reach the mouth of the Mackenzie.

This part of the coast is intimately associated with the two famous overland journeys made by Franklin and his brave companions, Richardson and Back. In the first of these journeys, the party commenced their return from the mouth of the Coppermine under extraordinary difficulties. The ground was covered with snow, game was scarce, and the strength of the expedition declined under the influence of cold, famine, and fatigue. More than half the party perished; but the Englishmen, sustained by courage and high spirit, survived. They returned to England in Oct. 1823, and two years later set out on another expedition, during which the line of coast from the mouth of the Coppermine to Beechey Point, in the meridian of 150° west, was carefully traced.

The Pacific Coast of the Dominion of Canada is not of great extent, as the territory of Alaska stretches in a narrow slip as far south as the mouth of the Simpson river. The shores of British Columbia are rocky, deeply indented, and skirted with numerous islands. Near the mouth of the Simpson are the **Queen Charlotte Islands**, and near the mouth of the Fraser, Vancouver Island, which is separated from American territory by the **Juan de Fuca** Strait.

SURFACE.—The **Rocky Mountains** form the chief range. In the extreme north the chain does not rise more than 1000 ft. above the shores of the Arctic Ocean, but as we follow the range southward its altitude rapidly increases, and it reaches an average of about 7000 ft. Some of its peaks are, however, more than double this elevation. **Mount Brown** attains a height of 16,000 ft., and Mounts **Hooker** and

Murchison both exceed 15,700 ft. There are several **passes** across the chain, the most accessible of which is the **Yellow Head Pass**, about the parallel of 53°, which has an altitude of 3760 feet only. To the west of the Rocky Mountains the country descends in terraces to the Pacific, and two subordinate ranges, the **Peak** Mountains and **Cascade** Mountains run parallel to the main chain. The Peak Mountains are sometimes called the Gold Range on account of the abundance of the precious metal which they contain; the Cascade Range is so named because of the numerous waterfalls made by the streams which burst through it on their way to the sea.

The country to the east of the Rocky Mountains, with the exception of the valley of the St. Lawrence, consists for the most part of an extended plain with a gentle slope to the north and north-east. This large tract is divided into two parts by Hudson Bay; to the east is the plateau of Labrador; to the west the north-west territory. A range of hills of no great elevation forms the watershed between the St. Lawrence and the streams which flow into Hudson Bay. This range, sometimes called the **Laurentian** chain, is known, towards its eastern extremity, as the **Wotchish** Mountains. South of the St. Lawrence are the **White** Mountains, and other spurs from the Alleghanies.

MINERALS.—The Dominion of Canada is rich in mineral wealth. **Gold**, copper, iron-ore, gypsum, and marble, are found in British Columbia. Extensive **coal-fields** have been discovered in Queen Charlotte Islands and in Vancouver Island. Coal is known also to exist in many parts to the east of the Rocky Mountains, and is found cropping out in various parts of the basin of the Saskatchewan. Silver, lead, copper, and tin, have been found to the north of Lake Superior; and **iron** is abundant in the neighbourhood of Lakes Erie and Ontario. The plain betwixt Lakes Huron, Erie, and Ontario, also contains rich wells of **petroleum.** Nova Scotia and New Brunswick are also rich in mineral wealth. Gold has been met with in both these provinces, as well as coal, iron, and copper. Various kinds of marble have been found in the basin of the Ottawa; and good building stone is abundant almost everywhere.

RIVERS AND LAKES.—The lakes of British America are exceedingly numerous, and are generally connected with some stream or river. The rivers, therefore, are equally numerous, but the four principal are the Fraser, Mackenzie, Saskatchewan, and the St. Lawrence.

The **Fraser** rises in the neighbourhood of Mount Brown and flows at first to the north-west; then taking a sharp turn to the south-west it is joined at Fort George by the Stuart river. The country enclosed by this great bend of the Fraser is the famous "Cariboo" district, the richest gold region in British Columbia. From Fort George the river flows almost directly south for about 400 miles and receives many tributaries, the principal of which is the Thompson, which joins it at Lytton. The Thompson rises in the Cariboo district and flows at first south-east and then south to Fort Kamloops. Here it is joined by the Shushwap, which drains a lake of that name. Below the confluence the Thompson flows through *Lake Kamloops*, from which it issues as a clear stream to be mingled with the turbid waters of the Fraser. Before bending to the east, the Fraser makes the passage of the Cascade range. The gorge through which it flows is very narrow, and the cliffs rise on either side to the height of 3000 or 4000 feet. Through this defile the Fraser flows in a succession of rapids at the rate of twenty miles an hour. After leaving the mountains the valley of the Fraser widens rapidly, and the river flows between richly wooded banks. At Carnarvon it is joined on the right bank by the Harrison, which drains Harrison Lake. The usual route to the Cariboo diggings is up the valley of this stream, as by this means the cañons, or rapids, are avoided. New Westminster stands about ten miles from the coast, where the delta of the river begins to form. The total length of the Fraser is about 800 miles.

The **Mackenzie,** under the name of Athabasca, rises at the foot of Mount Brown, not far from the source of the Fraser, and flowing to the north-east enters *Athabasca Lake*. Into this lake also flows the Peace river, which rises on the western side of the Rocky Mountains and bursts through the chain by a narrow gorge bounded by lofty mountains covered with perpetual snow. A stream called the Slave river connects Athabasca with *Slave Lake*, and a river issuing from the western extremity of this lake takes the name of Mackenzie. At Fort Simpson the Mackenzie receives the Turnagain, or Liards river. This important stream rises between the Cascade range and the Peak Mountains, and bursts through two ridges before it enters the plain on the east side of the Rocky Mountains. From Fort Simpson the Mackenzie flows to the north-east, and is joined by a stream which drains the *Great Bear Lake*. It empties itself by a delta which extends about 40 miles along the shores of the Arctic Ocean. The total length of the Mackenzie, reckoned from the source of the Athabasca, is about 2000 miles.

The **Saskatchewan** is made up of two branches which unite in the meridian of 105° west. Both branches have their source in a huge glacier in the Rocky Mountains. The southern branch, or Bow river, flows through the Vermillion Pass and drains a country of only moderate fertility; the northern branch flows through rich prairie land. Beyond the confluence of the two branches the main stream has a further course of 340 miles before it enters *Lake Winnipeg*. Into this lake also flows the *Red river*, which rises not far from the source of the Mississippi, and flows northward through a country of great natural fertility. Before entering the lake it is joined, at Fort Garry, by the Assiniboine. The surplus waters of Lake Winnipeg are discharged into Hudson Bay by the river *Nelson*. The total length of the Saskatchewan, from its source to Lake Winnipeg, exceeds 1000 miles; and the Nelson is about 400 miles long.

The **St. Lawrence.**—The true source of the St. Lawrence is *Lake Superior*, probably the largest fresh-water lake upon the globe. Its area exceeds that of the whole of Scotland or Ireland, and its depth is very great. Its surface is 627 feet above the level of the sea, and the St. Louis

—the most considerable stream that flows into it, and therefore sometimes regarded as the source of the St. Lawrence—rises 550 feet above the lake. St. Mary's river, which connects Superior with *Lake Huron*, has a length of about 40 miles, and makes in its course a descent of 32 feet. Huron is next in size to Superior among the American lakes, and has an area of 29,000 square miles. The lake is divided into two unequal portions by the Manitoulin Islands and a peninsula which ends in Cape Hurd. To the east is Georgia Bay, which is entered by a channel about ten miles wide. At its north-western extremity, Huron is connected with *Lake Michigan* by the Strait of Machillimakinac. Lake Michigan has an area of about 26,000 square miles. From the southern extremity of Lake Huron issues the St. Clair, which, after flowing for about 30 miles, expands into *Lake St. Clair*, and the channel which connects this lake with *Lake Erie* is called the Detroit. The fall between Lakes Huron and Erie is thirty feet. Erie is the shallowest of all the great lakes, its average depth being 85 feet. It is connected with Lake Ontario by the Niagara river.

FALLS OF NIAGARA.

The Niagara is thirty-three miles in length, and in that distance it makes a descent of above 300 feet. The celebrated *Falls of Niagara* are about twenty miles from Lake Erie. For about three miles after leaving the lake the stream has a rapid current, but it then becomes smooth and placid, and continues so until within a mile of the Falls, after which there is a rapid descent of fifty feet. The cataract consists of two falls divided by Goat Island. On the American side the descent is 164 feet, and the width of the channel 200 yards; on the Canadian side the "Horse-shoe Fall," as it is called, is 600 yards wide, and 158 feet in height. It is estimated that at least 100,000,000 tons of water are projected over the precipice every hour. The entire width of the river at the Falls, including Goat Island, is about 1300 yards; but below the Falls it is contracted into a stream 160 yards broad, and the river rushes furiously through the deep ravine. After flowing for about eight miles, the river emerges from its rocky channel, and flows with a deep and gentle current to Lake Ontario.

Ontario, the smallest of the great lakes, has an area of less than 6000 miles, and its surface is about 230 feet above the level of the Atlantic. The St. Lawrence, as the stream is now called, issues from the lake by two channels which surround Wolf Island. The channel of the river immediately below Wolf Island has the appearance of a lake, and is studded with a multitude of small islands, whence it is called the *Lake of the Thousand Islands*. Now following the river to the north-east and passing several rapids, we reach Lake Louis, formed by the confluence of the Ottawa. This lake contains four islands, the largest and most beautiful of which is Montreal, on which the city of that name stands. The Ottawa is itself a noble river 800 miles in length, which is fed by several important streams. About three miles above the town of Ottawa commences a series of rapids which terminate in the romantic *Chaudière Falls*. Below Montreal the St. Lawrence varies from three to four miles in width, and is navigable for vessels of 600 tons burthen. After receiving the Richelieu, which drains Lake Champlain in the territory of the United States, the main stream expands into Lake St. Peter, into which flows the St. Francis, from the south. At Three Rivers the St. Lawrence receives the St. Maurice, a stream about 200 miles in length which flows between high and rocky banks thickly clothed with timber. Just before reaching Quebec the river is joined by the Chaudiere on the right bank. At Quebec, the river is only 1314 yards wide, but it immediately expands into a rocky basin four miles in width, which forms a splendid harbour for the city. Below the island of Orleans the river widens rapidly, and at the mouth of the Saguenay is eighteen miles across. The source of the Saguenay is not well known, but about mid-way in its course it expands into Lake St. John. After leaving the lake its channel is often a mile in width, while the cliffs on either side rise to the height of more than 1000 feet. The mouth of this tributary is above two miles wide. At the island of Anticosti the St. Lawrence empties itself into the Gulf of St. Lawrence, and it thus completes a course 2000 miles in length.

Climate.—The climate of such an extent of ground must of course be various. In the extreme north the country borders on the Arctic regions, and the ground is covered with snow for the greater part of the year. Further south it is more genial. British Columbia has a climate resembling that of England; the mean annual temperature is about the same, and the climate is humid. The west coast of this part of the American continent is however warmer than the east coast. Vancouver Island has an average annual temperature of 50°—the same as London—while the average for Newfoundland is only 38°. The climate of the provinces of Ontario and Quebec is colder, drier, and more extreme than that of British Columbia, but it is very healthy. Its mean annual temperature is only 42°, but its summers are very hot, and hence many fruits which cannot ripen in the open air in England, come to perfection in Canada. Besides, though the cold is intense in winter it is not felt so much as might be expected; this is owing to the dry state of the atmosphere and the general absence of wind. New Brunswick and the other maritime provinces have a climate similar to Quebec, but more humid and temperate owing to the proximity of the sea. On the other hand, the country between Lake Superior and the Rocky Mountains has a very extreme climate. The summers being short and hot; and the winters long and severely cold.

VEGETABLE PRODUCTIONS.—A curve drawn from the mouth of the Mackenzie, through the middle of Hudson Bay, and continued across Labrador to Cape Farewell in Greenland, marks the northern limit of trees. To the north of that line, therefore, vegetation is scanty, and the ground is covered with numerous lakes and swamps producing quantities of mosses and lichens or stunted shrubs. Immediately south of this region, boundless forests of black and white spruce, with an undergrowth of reindeer moss, afford shelter for the numerous fur-bearing animals. In the basin of the St. Lawrence are vast forests of pine, oak, ash, hickory, beech, birch, the Canadian poplar, and the sugar maple to whose foliage the woods owe their beautiful autumnal tints. Canada proper, like all countries possessing a dry climate, produces flowers of great beauty, and in summer its woods are crowded with the scarlet lobelia, the purple gentian, the lupin, and the honeysuckle; but the climate is too dry for the daisy and primrose. The basin of the Saskatchewan contains extensive prairies covered with luxuriant grass. British Columbia is well wooded, and in its forests we find the cedar, arbutus, maple, pine, birch, and hazel; the wild rose, the sweet-briar, and various berry-bearing bushes are also numerous.

ANIMALS.—The principal wild animals found in British North America are the bison, musk-ox, the reindeer, and elk; the grizzly, brown, black, and white bears; wolves, beavers, and various kinds of fur-bearing animals, among which may be mentioned foxes, squirrels, martens, sables, ermines, seals, and otters. Flocks of turkeys, geese, and pigeons, are occasionally met with in a wild state; and the seas, lakes, and rivers abound with fish.

Far within the Polar Circle dwell the seal and polar bear. The **musk-ox** and reindeer are found as far north as the Parry Islands. The southern limit of the musk-ox is the parallel of 60°, and south of that latitude we meet with the **bison**, which roams in vast herds over the prairies of North America. The black and brown bears roam over the whole continent, from the isthmus of Panama to the Arctic Ocean, but the fierce grizzly bear is confined to the forests, and especially those on the eastern slopes of the Rocky Mountains. Flocks of wild pigeons are sometimes so numerous in the North American forests that, in congregating to roost, they cover every tree, over large tracts, and occasionally break off large branches by their weight. They pass twice a year over Canada and the Northern States of America in their migrations north and southward. The humming bird is sometimes seen in British Columbia.

PEOPLE.—The original inhabitants of this part of the American continent belong to two races—the Esquimaux and Indians—both of which are of Mongolian origin. The *Esquimaux* dwell on the shores of the Arctic Ocean and the coast of Labrador. The native *Indians* are found in other parts of the Dominion, but are most numerous to the west of the Rocky Mountains. The character of the American Indian is well known, and has often been described. He is active and vigilant in his habits, and shows an extraordinary insensibility to pain. In disposition he is daring and cruel, but at the same time generous and hospitable. Various attempts have been made to bring the Indians under the influence of civilization, but hitherto only with partial success; and it is to be feared that the race is slowly dying out. The bulk of the inhabitants of the Dominion are white people, but the total population only amounts to 4,000,000. In the provinces of New Brunswick and Quebec the settlers are chiefly of French extraction; in Nova Scotia, Scotch; in the other provinces English, Irish, or German.

INDUSTRY.—The chief employments of the people are lumbering, agriculture, mining, hunting, and fishing. By the **lumber trade** is meant the felling and export of timber; this branch of industry is carried on more or less in all the provinces, but especially in New Brunswick and Ontario. The trees are generally cut down in the winter season, and the trunks are rolled into the frozen rivers to await the melting of the ice. In spring large rafts are formed, and the timber is floated down to the lumber factories where it is sawn into planks and logs. **Agriculture** is carried on whenever the ground has been cleared, and wheat of excellent quality is raised in the provinces of Ontario and Quebec. **Mining** is pursued chiefly in British Columbia and Nova Scotia; **hunting** in the North-West Territory, and **fishing** in New Brunswick, Nova Scotia, and Labrador. The chief exports from the Dominion are timber, potash, wheat, flour, and petroleum, to Great Britain; beef, pork, beer, grain, and flour, to the West Indies; timber, wheat, and live stock to the United States. The imports consist of coals, metals, manufactured goods, and colonial produce.

The river St. Lawrence, with the various lakes and tributary streams belonging to it, greatly facilitates communication between the various eastern provinces; and it is proposed to connect these provinces to British Columbia by a railway which shall pass through the Red River Settlement and the valley of the Saskatchewan. Already there is a line, called the Grand Trunk, which runs from Riviere du Loup, on the south bank of the St. Lawrence, opposite to Quebec, to the outlet of Lake Huron; and a line connecting Riviere du Loup with Halifax, in Nova Scotia, is in progress. The railways already in operation are over 3000 miles in length, and there are above 1000 miles in process of construction. The Pacific Railway, which is to connect British Columbia with the eastern provinces, will be about 2400 miles in length.

PROVINCES.—The Dominion of Canada includes the provinces of Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba, North-West Territory, and British Columbia. Each province, except the North-West Territory, has a lieutenant-governor and legislature of its own; but the whole are united in a confederation presided over by a governor-general, and there is a general parliament for the whole Dominion consisting of a senate and a legislative assembly. This parliament meets at Ottawa, which is the capital of the Dominion.

Nova Scotia.—This province includes the island of Cape Breton. The peninsula of Nova Scotia is connected to New Brunswick by an isthmus only twelve miles wide; it has an area of 15,600 square miles. **Cape Breton** Island is separated from the peninsula by a narrow channel called the *Gut of Canso.* It has an area of rather more than 3000 square miles, and is very irregular in shape, being almost bisected by an inlet called Bras d'Or. The island is famous for its coal mines. The population of the province is nearly 400,000; and the inhabitants are chiefly engaged in agriculture, mining, and the fisheries. About one-half the surface is good arable land.

The principal fisheries are upon the eastern coast, and the chief fish caught are cod, salmon, mackerel, and lobsters. The chief towns are **Halifax**, the capital; and **Sydney**, the chief town in Cape Breton Island. Halifax has one of the finest harbours in the world, and is the principal naval station of British North America.

Prince Edward Island is separated from Nova Scotia by Northumberland Strait. It has an area of only 2173 square miles, and its population is 94,000. The island is level, the soil fertile, and the climate mild and healthy. The inhabitants are chiefly of Scottish descent, and agriculture is the chief branch of industry. The principal grain crop is oats, but barley and wheat are also grown. The capital is *Charlottetown.*

New Brunswick is a compact territory with an area of 27,700 square miles, and a population of 285,000. Along the shores of the Gulf of St. Lawrence, the country is low and sandy, but the interior is diversified with hill, dale, and plain, and the greater portion of it is covered with timber. The chief industrial pursuits arise from the produce of the forests and fisheries. Agriculture, however, is making steady progress, and mining is beginning to attract attention. *Coal* is abundant, and copper, iron, and other valuable minerals are found. The chief towns are Fredericton, St. John, Bathurst, Newcastle, and Shediac.

Fredricton, on the St. John River, is the capital; **St. John**, at its mouth, is the chief port. **Bathurst** stands on the Bay of Chaleurs; **Newcastle** is at the mouth of the Miramichi, the second river in the province. **Shediac**, on Northumberland Strait, is a fishing town, and it is connected to St. John by a line of rail which runs into the United States.

Quebec.—The province of Quebec extends on both sides of the St. Lawrence, from the confluence of the Ottawa to Cape Gaspé, and has an area of 210,000 square miles. The soil throughout this immense tract is of great fertility, and the cereals, grasses, root-crops, and fruits of central Europe grow freely. Maize or Indian corn also produces large crops. A great portion of the province, however, still consists of forest-land, and hence *lumbering* is perhaps the chief branch of industry. The *fisheries* are also very valuable; it is said that there are more than 70 salmon rivers in the province. The population is about 1,200,000. Being descended from the original French colonists, the inhabitants still speak French, and profess the Roman Catholic religion. The chief towns are Quebec and Montreal.

Quebec, the seat of the provincial government, has a population of about 60,000, and is the chief seaport in the Dominion. **Montreal**, with a population of 107,000, is the great centre of trade, and may be considered the commercial capital of the Dominion. Its public buildings are remarkably handsome; and the tubular bridge which carries the Grand Trunk Railway across the St. Lawrence is two miles in length. It is proposed to build another bridge still longer a little further up the stream.

MONTREAL.

Ontario is the most populous province in the Dominion. Its soil is for the most part fertile, and the extensive plain which stretches south-west, between Lakes Huron, Erie, and Ontario, is particularly so. Here it is also that the valuable wells of *petroleum* are found. Agriculture forms the chief employment of the people, though there are large forests in the northern part of the province, and the *lumber* trade is carried on, perhaps, to a greater extent in the valley of the Ottawa than in any other part of the Confederation. Ontario is also rich in mineral wealth of almost every kind except coal. Some of the *silver* and *copper* mines are very rich, and valuable deposits of iron have been found in the Laurentian mountains. The area of the province is about 180,000 square miles, and the inhabitants, who are chiefly British, or of British descent, number about 1,700,000. The chief towns are Toronto, Ottawa, London, and Kingston.

Toronto, the seat of the provincial government, stands on the western shore of Lake Ontario, and has a population of 70,000. **Ottawa,** the capital of the Dominion, has a population of about 22,000; the Houses of Parliament are said to be the finest buildings on the continent of America. **Hamilton,** on the south-western shore of Ontario, is a place of considerable trade, and has a population of 27,000. **London**, on a stream called the Thames, is about equally distant from Lakes Erie and Huron. **Kingston**, near the outlet of Lake Ontario, is connected with Ottawa by the Rideau Canal: it carries on a large trade.

Manitoba, formerly known as the Red River Settlement, has an area of about 14,000 square miles, and a population of less than one person to each mile. The soil is exceedingly rich and well adapted to the growth of wheat, vegetables, and root-crops. The natural grasses of the country are also very nutritious and particularly favourable for fattening stock of all kinds. When a railway has been constructed between the Pacific and the Atlantic, Manitoba will have an outlet for its agricultural produce, and the province will then very probably rapidly increase in population. *Winnipeg*, on the Red River, is the seat of government. The white population is of English, French, or Scotch origin, and the proceedings of the local legislature may be carried on either in the English or French languages.

The **North-West Territory** is a vast extent of land lying between the Rocky Mountains and Hudson Bay. The northern portion of the territory will probably never be of value except as a hunting ground, but the whole basin of the Saskatchewan is well adapted to the growth of wheat. In this same tract there is also a large coal-field, and in some parts the *coal* strata crop out on the banks of the streams. Iron, gold, copper, and other minerals have also been met with. The inhabitants consist chiefly of native Indians, and the only settlements are forts belonging to the Hudson Bay Company.

The Hudson Bay Company was established in 1670 for the purpose of trading in the skins of fur animals. It possesses about 100 forts in various parts of the territory, where its agents reside, who receive from the native Indians the skins of the animals they have captured. In return for these the Indians receive guns, knives, blankets, tea, sugar, tobacco, spirits, and other articles. The fur animals are only hunted at certain seasons, and thus not only is the supply kept up, but, it is said, the animals actually increase in number. The furs collected from the various forts are shipped to London once a year either from Fort York, on Hudson Bay, or from Montreal.

British Columbia.—This province includes Vancouver Island, and has an area of 213,000 square miles. The settled white population is about 15,000, but if we include the floating population of Chinese and other miners, and the aboriginal Indians, the total number amounts to about 65,000. The wealth of the province is its minerals. **Gold**

is found both in the Cariboo district and in Vancouver Island, and the annual amount exported is about £700,000. *Coal* of good quality is also worked in Queen Charlotte's Island, in Vancouver Island, and on the mainland. The extensive forests produce valuable timber, which forms an important article of export. Agriculture is making great progress both in British Columbia and Vancouver Island; both districts, though mountainous, contain extensive level tracts of great natural fertility. The vegetable productions are similar to those of Great Britain. The capital of the province is *Victoria*, on Vancouver Island, which has a population of 5000. *New Westminster*, on Fraser river, was the former capital. Among other places of importance may be mentioned Hope, Yale, and Lytton, on the Fraser; and Nanaimo, to the south of Victoria, famous for its coal mines.

NEWFOUNDLAND.

This large island, at the entrance to the Gulf of St. Lawrence, has not yet joined the Canadian Confederation. It has an area of 40,000 square miles, but very little is known of the interior, which seems to consist of a succession of hills and valleys, with numerous rivers and lakes. The soil is for the most part barren, but the country is rich in minerals, comprising coal, iron, copper, lead, granite, and good building stone. The climate is severe, but healthy; and fogs prevail during the month of May. The chief employment of the people is **fishing**. In the early part of the year the inhabitants are engaged in the capture of seals, on the coast of Labrador; from June to October the cod-fishery is carried on. The population is 146,500. *St John's*, the only town of importance on the island, has a population of 30,000.

St. John's is situated on the Avalon Peninsula, which is the most populous part of the island. On either side of the isthmus, which connects this peninsula with the rest of the island, are Trinity and Placentia Bays. Trinity Bay is the terminus of the four Atlantic cables which start from Valentia Island, on the south-west coast of Ireland. A network of cables connects Trinity Bay with Cape Breton, Nova Scotia, and the United States.

Labrador is a dependency of Newfoundland.

'er
)0.
e's
'he
an
eat
id;
vel
ons
the
pu-
the
be
ınd
ies.

ıw-
It
wn
ills
| is
als,
ild-
ore-
; of
in-
; of
on.
im-

ıost
ects
ıys.
rom
oles
tes.

DOMINION OF
BRITISH COLUMBIA
VANCOUVER I.
Juan de Fuca St.
C. Flattery
New Westminster
WASHINGTON
Olympia
R. Columbia
Astoria
St. Helens
Mt. Hood
Salem
OREGON
C. Blanco
C. Mendocino
PACIFIC OCEAN
CALIFORNIA
Sacramento
Benicia
S. Francisco
Stockton
Monterey B.
Conception C.
Sta. Barbara
S. Pedro
S. Diego
Guadalupe I.
LOWER CALIFORNIA
Gulf of California
C. San Lucas
Tropic of Cancer
NEVADA
Carson
Virginia
Pyramid L.
Humboldt R.
IDAHO
Boisee
Lewis R.
MONTANA
Helena
Virginia
R. Missouri
Yellowstone R.
Yellowstone L.
Nat. Park
Fremont Peak
Ft. Benton
Milk R.
R. Assiniboine
UTAH
Great Salt Lake
Salt Lake City
Utah L.
Fillmore
Rio Colorado
WYOMING
Ft. Laramie
Cheyenne City
Longs Peak
Golden City
Denver
COLORADO
Pikes Peak
NEBRASKA
Platte R.
Lincoln
Omaha
Ft. Kearney
Republican Fork
KANSAS
Kansas R.
Topeka
Cimarron R.
INDIAN TERRI
ARIZONA
Prescott
R. Gila
Tucson
NEW MEXICO
Santa Fe
Albuquerque
Rio Grande
MEXICO
Presidio del Norte
Mazatlan
R. Pecos
TEXAS
Colorado
Austin
S. Antonio
Matamoros
Red R.
DAKOTA
Pembina
Lake Winn
Longitude West 100 of Greenwich
130
125
120
115
110
105
100
45
40
35
30
25
20
William Collins Sons

UNITED STATES
British Miles
0 100 200 300 400 500
CANADA
ONTARIO
QUEBEC
James Bay
Lake Winnipeg
L. of the Woods
Lake Superior
Lake Michigan
Lake Huron
Georgian Bay
Lake Erie
L. Ontario
MINNESOTA
WISCONSIN
MICHIGAN
IOWA
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
MASSACHUSETTS
MARYLAND
WEST VIRGINIA
WASHINGTON
KENTUCKY
TENNESSEE
NORTH CAROLINA
STH CAROLINA
GEORGIA
ALABAMA
MISSISSIPPI
LOUISIANA
ARKANSAS
MISSOURI
FLORIDA
TERRITORY
ATLANTIC OCEAN
GULF OF MEXICO
CUBA
Bahama Islands
JAMAICA
Kingston
Havanna
Matanzas
I. of Pines
Puerto Principe
Nassau
Florida Channel
C. Sable
Key West
Quebec
Montreal
Ottawa
Toronto
London
Boston
Portland
Augusta
Bangor
Fredericton
Albany
Buffalo
Utica
Detroit
Lansing
Chicago
Milwaukee
Madison
Green Bay
St. Paul
Superior City
Cleveland
Toledo
Sandusky
Pittsburg
Harrisburg
Philadelphia
Baltimore
Wheeling
Columbus
Cincinnati
Indianapolis
Springfield
Vandalia
Jefferson
St. Louis
Cairo
Louisville
Lexington
Frankfort
Nashville
Memphis
Little Rock
Atlanta
Augusta
Milledgeville
Columbia
Charleston
Savannah
Georgetown
Wilmington
Raleigh
Richmond
Norfolk
Petersburg
Montgomery
Mobile
Pensacola
Tallahassee
St. Augustine
C. Canaveral
Jackson
Vicksburg
Natchez
Baton Rouge
New Orleans
Galveston
Des Moines
Burlington
Iowa
Long I.
Brooklyn
Nantucket I.
C. May
Delaware B.
Chesapeake B.
C. Charles
Albemarle Sd.
C. Hatteras
Pamlico Sd.
C. Lookout
Beaufort
C. Fear
95 90 85 80 75 70 65
45 40 35 30 25

ons & C.º Publishers

UNITED STATES OF AMERICA.

Boundaries and Extent.—The United States, exclusive of Alaska, in the extreme north-west of the continent, which was purchased from Russia in 1867, form a compact mass of territory, bounded on the north by British America; on the south by the Gulf of Mexico, the Rio Grande, and a line running westward to the Pacific; on the east by the Atlantic; and on the west by the Pacific Ocean. It stretches from east to west, a distance of 2800 miles; and from north to south, a distance of 1600 miles; and embraces an area of 3,026,000.

The northern boundary runs through the channel which separates Vancouver Island from the mainland, then along the 49th parallel as far as the Lake of the Woods, and thence through Rainy Lake to Lake Superior. It passes through Lakes Superior, Huron, Erie, and Ontario to the St. Lawrence. The river next forms the boundary as far as the 45th parallel; further eastward the boundary line is irregular.

Coast-Line.—The coast-line is very extensive, and the Atlantic shores, especially, are deeply indented with some magnificent harbours. Commencing at the Bay of Fundy, an irregular coast leads south-west to **Cape Cod**, to the north of which is Boston Bay. Plymouth, a little south-east of Boston, is the place where the Pilgrim Fathers, who laid the foundation of the New England Colonies, landed in 1620. From Cape Cod the coast runs almost due west to New York, at the mouth of the Hudson. Upon Long Island, which lies opposite the city, stands Brooklyn, which is considered a suburb.

Between Long Island and New York the channel is called East River, and in one place the passage is very narrow. At this point, until recently, the channel was encumbered by a reef of rocks, which made navigation difficult and sometimes dangerous. Various attempts have been made at different times to improve the passage, which bore the sinister name of *Hell Gate*. At length it was determined to blow up the reef with dynamite. The rock was tunnelled about 30 ft. below the surface of the water with numerous galleries; charges of dynamite were placed at intervals and connected by telegraph wire; the whole were connected with strong batteries, and all the electric currents brought to one point. At a given signal, a little child of two years touched a key, the whole of the charges exploded, and 92,000 tons of hard rock were broken up without the slightest accident.

From New York the coast has a general direction to the south, as far as **Cape Hatteras**; the shore is low, and in many places skirted with long narrow islands. The River Delaware, which enters the sea in this point, forms by its estuary a noble harbour. Further south, however, we meet with **Chesapeake Bay**, a still finer inlet. The bay is 180 miles in length, and from ten to twenty-five broad. The water is deep, and the shores afford numerous harbours. The Susquehanna, Potomac, and James River all flow into this splendid estuary; at the entrance to the bay is **Cape Charles.** From Cape Hatteras the shore-line runs south-west until we reach the peninsula of Florida. In this section the shores are low and marshy, swamps sometimes extending 100 miles inland. Low sandy islands skirt the coast, but are covered with plantations of the famous "sea-island" cotton. The same character of coast is met with in Florida, and round the Gulf of Mexico.

The Pacific coast runs south-west from **Cape Flattery** to Cape Mendocino, and has few good harbours. The Columbia forms a wide estuary at its mouth, but it is crossed by a sand-bar, over which the sea breaks with great violence, rendering access to the river very difficult and sometimes impracticable. From **Cape Mendocino** the coast runs south-east, and here we meet with the fine bay of San Francisco, the narrow entrance to which is called the **Golden Gate.** The town stands on a neck of land about six miles wide, on the south side of the Golden Gate.

At the distance of 200 or 300 yards from the shore stands a group of rocky islets known as the **Seal Islands.** These are the resort of hundreds of seals, which gambol about or lie basking in the sun in perfect safety, as the State Government has passed a law forbidding them to be disturbed. An immense number of seafowl also frequent the rock, and the sight is one of the most extraordinary that can anywhere be witnessed. An hotel has been erected on a cliff exactly facing the rocks, and this is one of the favourite afternoon resorts of the San Franciscans.

SURFACE.—The Rocky Mountains consist of several parallel ranges, and the system has a breadth varying from 50 to 100 miles. The mountains, however, are of very unequal elevation, and present rather the appearance of extensive groups than of regular ranges, and the passes are not rocky defiles, but wide plains of considerable elevation. The two most frequented passes are *Sherman's Pass*, crossed by the Pacific Railway, and that of *Santa Fé*, in New Mexico. *Fremont's Peak*, to the north of Sherman Pass, and *Long's Peak*, to the south of it, both reach 13,500 ft. *Pike's Peak*, a little further south, is about 2000 ft. less in elevation. The higher ranges are of granite, and are bleak and bare, being nearly destitute of vegetation; but many of the inferior ranges are scantily clothed with pines, oak, and cedar. Some of the more elevated parts also are covered with snow, which gives them a brilliant appearance when viewed from a distance, and hence, in New Mexico, the eastern range is known as the "Shining Mountains." In this State there are two main ranges, the western being known as the Sierra Madre.

The Great Basin of Utah, which lies between the Rocky Mountains and the Sierra Nevada, is a plateau with an elevation varying from 4000 to 5000 ft., and is crossed from north to south by several hill ranges, including the *Wahsatch Mountains*, the *Humboldt Mountains*, and the *Blue Mountains*. The country is sterile, and the soil in many parts strongly impregnated with salt; but the district is rich in minerals. The plateau contains some remarkable valleys, the chief of which is the *Great Salt Lake Valley*, which is about 120 miles long, and from 20 to 40 miles wide. On the north side of the lake the country is a swamp; on the south and west it is sandy and barren; but in the east and south-east it is fertile, and is cultivated by the Mormon settlers from the mountains to the shore.

The broad plains which lie to the east of the Rocky Mountains are interrupted by the *Ozark Mountains*—between the Arkansas and the Missouri—and the *Alleghanies*. The Alleghanies consist of several parallel ranges, which bear different names in different parts. The *Blue Mountains*, as the most easterly ridge is called, contains **Mitchell's Peak**, which reaches a height of 6,700 ft., and is the culminating point in the whole system. In Kentucky we meet with the *Cumberland Mountains;* in New York are the *Catskill Mountains;* in Vermont, the *Green Mountains;* and in New Hampshire, the *White Mountains*.

The general contour of the surface of the United States is well illustrated by the **Pacific Railway**. It commences at Omaha, on the Missouri, where it is connected with the various railway systems of the Eastern States. It runs at first almost due west to Cheyenne, which stands at the foot of the Rocky Mountains at an elevation of 7000 ft. The line makes a further ascent of 1400 ft. in the next thirty miles, until it reaches Sherman, at the head of the pass. It now descends gradually to the Salt Lake Valley, where the height is 4300 ft. In crossing the plateau the line rises again to an elevation of 6000 or 7000 ft., but sinks to 4000 ft. at the foot of the Sierra Nevada. This range is crossed at an elevation of 7000 ft., and then a steep descent of 105 miles leads down to Sacramento, the train running down mainly by its own momentum.

MINERALS.—The United States are extremely rich in minerals. Immense quantities of *gold* and *silver* are raised in California, Nevada, and Utah; and it is said that the territories of Montana, New Mexico, and Arizona are equally rich in precious metals. California is also rich in mines of *quicksilver*, iron, lead, and copper. In the Eastern States *coal*, *iron*, lead, and copper are found in great abundance, and salt springs are numerous in various parts. *Copper* is very plentiful in Michigan, and *lead* in Missouri, Iowa, Illinois, and Wisconsin.

There are four large **coal-fields** in the United States, besides a number of smaller ones. There are: (1) The Appalachian coal-field, which includes portions of Pennsylvania, Ohio, Virginia, Kentucky, and Tennessee, and embraces an area of 63,000 square miles; (2) the Illinois basin; (3) the Missouri basin; and (4) the Michigan basin. In most of these districts **iron** is found, but especially in the Appalachian basin, and this coal-field is also famous for its numerous wells of naphtha or **petroleum**.

RIVERS AND LAKES.—The surface of the United States is divided into three drainage areas by the Alleghany and Rocky Mountains: the Atlantic Slope, the Central Plain, and the Pacific Slope. The rivers in the first area are comparatively short, but of great commercial importance. Among these may be mentioned the *Connecticut*, *Hudson*, *Delaware*, *Susquehanna*, *Potomac*, *James River*, *Roanoke*, *Savannah*, and *Altahama*. The Central Plain is drained by the Mississippi and the Rio Grande; the Pacific Slope by the Columbia, Sacramento, and Colorado. The great lakes of North America are described in connection with the St. Lawrence. The Great Salt Lake of Utah, which is about 70 miles in length, has no outlet, but it receives the *Bear River* from the north, and the *Jordan* from the south. The Jordan flows from a small freshwater lake.

The **Mississippi** has its source in *Lake Itasca*, a small sheet of water lying amid pine-clad hills at an elevation of 1500 ft. It curves round to the east and then to the south, and at St. Paul is joined by the Minnesota.

The Mississippi now flows with a general direction to the south, and receives in succession the waters of the Wisconsin, Iowa, Des Moines, and Illinois. It is here nearly a mile in width, with a gentle current of clear blue water, and a surface dotted with numerous islands. It is now joined, a short distance above St. Louis, by the turbid Missouri, and although the width of the stream is not increased, its velocity is nearly doubled.

The **Missouri** rises in the Rocky Mountains in several streams which unite about the parallel of 45°. Its course is at first north through a long valley, and it then descends, at the *Great Falls*, by a series of cataracts which are said almost to rival in grandeur the Falls of Niagara. From this point the river flows eastward for some distance, and is joined by the Yellowstone. This stream has its source in a lake which lies in a district remarkable for its signs of volcanic agency. It contains boiling springs which far surpass the geysers of Iceland in size and number; and the whole district has been set apart by the Central Government as a national park.

The Missouri now flows for a considerable distance through a sandy desert, where it loses so much water that, though it receives a number of other large feeders, the volume which it brings to the Mississippi is not much more than it has immediately after the confluence of the Yellowstone. Near Fort Madan the Missouri is deflected to the south, and after flowing a considerable distance is joined by the Platte or Nebraska River, along the side of which runs the Pacific Railway for a considerable distance. The Missouri next receives the Kansas, and then turning eastward joins the Mississippi after a course of 3000 miles.

The Mississippi is next joined by the Ohio, which is formed by two streams—the Alleghany and Monongahela—which unite at Pittsburg. The Ohio brings with it the waters of the Wabash, Cumberland, and Tennessee, and joins the Mississippi after a course of nearly 1000 miles. The main stream now flows through a well-timbered valley, which increases in width towards the south. The Arkansas is, next to the Missouri, its largest tributary. It rises in the Rocky Mountains, but its source is not exactly known. It receives several affluents, of which the Canadian is the chief. This large stream, however, is almost stagnant in summer, and its bed in many places entirely dry. A short distance above Baton Rouge the Mississippi receives the Red River, and then shortly afterwards, turning east, it discharges its waters by five mouths at the extremity of a tongue of land which stretches fifty miles into the Gulf of Mexico. The total length of the Mississippi, including the Missouri, is 4200 miles, and the area of its basin is about 1,260,000 square miles.

The **Rio Grande del Norte** rises in the neighbourhood of Pike's Peak, and flowing southward enters Mexico. It then turns eastward, and having received the Pecos, forms, for the remainder of its course, a boundary line. Its lower course lies through an arid plain, and hence its volume of water is not large. Its length is about 1500 miles.

The **Columbia** rises in British territory about the parallel of 50°, and flows at first to the north and then to the south, parallel to its upper course. On the borders of the States it is joined by the Clarke River, which drains a considerable area in the Rocky Mountains. It afterwards receives the Lewis or Snake River, which rises in the same neighbourhood as the Missouri, and drains the northern portion of the Great Basin of Utah. The course of the Columbia is now westward, and in breaking through the Cascade Mountains it forms a gorge full of the grandest scenery, but quite impassable even by boats. The river empties itself by an estuary seven miles wide after a course of about 1200 miles. The area of its basin has been estimated at 230,000 square miles.

The **Sacramento**, a stream about 300 miles in length, drains the valley between the Cascade Range and the Sierra Nevada. It receives several feeders, the chief of which is the San Joaquin, which flows through *Lake Tulare*, and drains the southern part of the valley. The Sacramento flows into the Bay of San Francisco.

The **Colorado**, under the name of Green River, rises in the neighbourhood of Fremont's Peak. It is joined by the Blue River, which flows from Long's Peak, and is then known as the Colorado. The stream flows south-west and receives several tributaries, the largest of which is the Gila. It empties itself into the Gulf of Mexico after a course of about 1500 miles.

Climate and Productions.—As the United States extend from the 49th parallel as far south as the 25th, the climate, as we should expect, is much warmer than that of England. New York has about the same average temperature as London, while the states on the Gulf of Mexico have a semi-tropical climate, and sugar, cotton, and indigo are produced. But the Northern States, though they have nearly the same average temperature as the south of England, have much hotter summers and colder winters, and the changes of temperature are greater and more frequent. The climate of the Northern States also differs from that of England in being much drier. In the states and territories which lie among the mountains the heat is of course tempered by elevation, and on the plateau of Utah the nights are sometimes bitterly cold. Along the Pacific slope, however, the climate is delightful, and California produces fruits of all kinds. The climate upon the whole is healthy, if we except some swamps and marshes bordering the Atlantic and the Gulf of Mexico, or lying along the banks of some of the great rivers.

A vast forest at one time extended from the Atlantic to the Mississippi. Much of this has been cleared away, but abundance of timber still remains, especially on the western slope of the Alleghanies. The Ohio flows for hundreds of miles through magnificent forests, where the tulip tree, cypress, maple, black walnut, and hickory spring out from an undergrowth of azaleas, rhododendrons, and other flowering shrubs. To the west of the Mississippi is the region of the **Prairies**, which consist of vast plains, sometimes level, sometimes slightly undulating, but gradually increasing in elevation to the west. They are covered with long rank grass blended with flowers, but trees are scarce, except along the watercourses. Animal life, however, is abundant. Herds of wild horses, bison, deer, and buffalo are met with; wolves, rattlesnakes, owls, and vultures are common, as well as a curious little barking rodent called the prairie dog. Kansas is the very centre of the prairies. Nearer the base of the Rocky Mountains the soil becomes sandy and barren. This tract, called the **American Desert**, extends as far north as the 44th parallel, and in the south it is of considerable width. The *Llano Estacado* or Staked Plain, in Texas, is so called because stakes are placed at intervals across it to guide the traveller. At the mouth of the Mississippi there are marshes which cover 35,000 square miles, and to the east are "pine barrens" which occupy the whole coast from Pearl River to Florida, and stretch far into the interior. These "barrens" are tracts of sand covered with forests of gigantic pines.

The lower slopes of the Rocky Mountains are clothed with timber, but the Desert of Utah is almost destitute of trees, except in the more sheltered ravines, and occasionally at the bases of some of the hill ranges. Wild game, however, abounds, and the antelope, deer, bear, and panther are numerous. The Sierra Nevada is thickly clothed with the fir, pine, oak, cypress, and cedar; and, on the western slope especially, there are magnificent forests where the *Wellingtonia pine* rises to a height of 300 ft. The Pacific slope is also remarkable for the beauty and brilliancy of the flowers, and the rich variety and flavour of its fruits.

PEOPLE.—The present population of the United States is about 45,000,000, of whom about six-sevenths are white people, and the remainder Negroes, Chinese, and native Indians. The Europeans are chiefly of English and Irish descent, but there are also large numbers of Germans, Dutch, French, Spaniards, and Swedes, who are either immigrants or their descendants. The number of immigrants to the United States in 1875 was 230,000.

The foundation of the United States may be said to have been laid by the **Pilgrim Fathers**, who embarked in the *Mayflower*, and landed at Plymouth, in Massachusetts, in 1620. The colony gradually extended itself, and remained in connection with England until the outbreak of the American War, when a Declaration of Independence was drawn up and published at Philadelphia, July 4, 1776. Since that time the country has increased rapidly in size and population, and it now occupies the entire breadth of the continent, and includes 38 states, besides several territories. Each state has its own governor and legislature, and manages its own internal affairs, but the whole form a federal republic under a President, who is elected every four years, and a Congress—consisting of a senate and house of representatives—which meets at Washington.

There is no established religion, each church being supported by the voluntary contributions of its own members. There is a great variety of sects, but the most numerous are the Presbyterians, Methodists, Baptists, Protestant Episcopalians, Roman Catholics, Quakers, and Lutherans. The Presbyterians are the prevailing sect in the older states of the Union, the Quakers are numerous in Pennsylvania, and the Lutherans among the German residents. Popular education is carefully attended to, and in New York and the New England States it is highly advanced. There are also a large number of colleges and universities—among the latter may be mentioned the Harvard University at Cambridge in Massachussetts; and those of Yale in Connecticut, and Ann Arbor in Michigan. The standing army consists of about 30,000 men, and the navy of 175 vessels, including 48 ironclads.

INDUSTRIAL PURSUITS.—The chief branches of industry carried on in the states are agriculture, manufactures, mining, fisheries, and commerce. *Mining* is carried on chiefly in the Western States in California, Nevada, and Utah especially. Coal mining is also carried on to a considerable extent in the Eastern States. The *fisheries* are chiefly those of cod, on the banks of Newfoundland, and the South Sea Whale Fishery. The whale fishery is chiefly carried on by the State of Massachussets. A number of vessels also leave San Francisco every year for the Northern Whale Fishery in Behring Straits.

Agriculture is, however, by far the most important branch of industry, and every year the extent of surface under tillage is being increased. About one-tenth of the entire area of the Union is now under cultivation. The chief crops raised are wheat, maize, tobacco, flax and hemp, cotton, rice, and sugar. *Wheat* is grown chiefly in the states lying north and north-west of Virginia. *Maize* is grown in all the states, but especially in Virginia, Ohio, Kentucky, and Tennessee. *Tobacco* is produced in Maryland, Virginia, and the states lying to the south and west. *Flax* and *hemp* thrive well in Kentucky, and in all the country to the west of the Appalachian Mountains. *Cotton* is grown in the Southern States generally, but not further north than Tennessee and Virginia. *Rice* is cultivated over the same area as cotton, but *sugar* is confined to Louisiana, Florida, Georgia, and the intervening states.

The **manufactures** are important and rapidly increasing, as there is a plentiful supply of coal and iron. Iron, cotton, and woollen goods are the chief articles produced, and to these may be added linen, glass, hardware, earthenware, leather, and other articles. The manufacture of *agricultural machines*, sewing machines, and other contrivances for the diminution of manual labour, has always attracted particular attention in the states where labour is scarce, and to America we owe many of our most valuable inventions. The *cotton* manufacture is carried on to a great extent in Massachussetts; the *woollen* manufacture in Pennsylvania; and the smelting and manufacture of *iron* in the Appalachian coal-field, Pittsburg being the great centre.

The **commerce** of the United States is very extensive, and its foreign trade ranks next to that of Great Britain. The chief exports are cotton, flour, maize, rice, tobacco, dried beef, horses, cattle, fur, and the produce of the forests, mines, and fisheries. Agricultural produce amounts to about two-thirds of the total value of the exports. The imports consist chiefly of manufactured goods, wines, fruits, sugar, tea, coffee, and other colonial produce. The value of the exports to Great Britain exceed £74,000,000, and the imports from England to nearly half that sum.

The internal communication of the States is in a state of great efficiency. Besides the splendid water communication afforded by the rivers and lakes, there are also numerous canals; and the length of railways already open for traffic exceeds 70,000 miles. The journey from New York to San Francisco, a distance of 3300 miles, can be accomplished, by means of the Inter-oceanic Railway, in six days. The mercantile marine ranks next to that of Great Britain, and includes about 30,000 vessels.

DIVISIONS AND TOWNS.—The Union at present consists of 38 States, one Federal District, and 8 organised Territories.

The Federal District is a small tract upon the borders of Maryland and Virginia set apart for the purposes of the Central Government, and includes the city of Washington. The area of the district is only 64 square miles.

In the following Table we give the states and territories, with the area, population, and chief towns of each, the capital of each, in all cases, being placed first:—

NAME.	Area.	Population.	TOWNS.
NORTH-EASTERN, OR NEW ENGLAND STATES.			
Maine, - - - - -	35,000	627,000	Augusta, Portland.
New Hampshire, - -	9,280	318,000	Concord.
Vermont, - - -	10,212	330,600	Montpellier.
Massachusetts, - -	7,800	1,457,000	Boston, Lowell, Cambridge.
Rhode Island, - -	1,306	217,350	Providence.
Connecticut, - - -	4,750	537,000	Newhaven.
MIDDLE STATES.			
New York, - - -	47,000	4,382,000	Albany, New York, Brooklyn, Buffalo.
New Jersey, - - -	8,320	906,000	Trenton, Newark.
Pennsylvania, - -	46,000	3,522,000	Harrisburg, Philadelphia, Pittsburg.
Delaware, - - -	2,120	125,500	Dover, Wilmington.
Maryland, - - -	11,124	781,000	Annapolis, Baltimore.
District of Columbia, -	—	—	Washington.
SOUTHERN STATES.			
Virginia, - - -	38,348	1,225,000	Richmond, Norfolk.
West Virginia, - -	23,000	442,000	Wheeling.
North Carolina, - -	50,704	1,000,000	Raleigh, Wilmington.
South Carolina, - -	34,000	705,600	Columbia, Charlestown.
Georgia, - - - -	58,000	1,200,009	Milledgeville, Savannah.
Florida, - - - - -	58,268	187,750	Tallahassee, St. Augustine.
NORTH-WESTERN STATES.			
Ohio, - - - - -	39,964	2,665,000	Columbus, Cincinnati.
Michigan, - - -	56,451	1,184,000	Lansing, Detroit.
Indiana, - - - -	33,809	1,680,000	Indianopolis.
Illinois, - - - -	55,410	2,540,000	Springfield, Chicago.
Wisconsin, - - -	53,924	1,000,000	Madison, Milwaukie.
Minnesota, - - -	83,531	440,000	St. Paul.
Iowa, - - - -	55,045	1,200,000	Iowa City.
Nebraska, - - -	75,995	123,000	Omaha.
SOUTH-WESTERN STATES.			
Kentucky, - - -	37,680	1,320,000	Frankfort, Louisville, Lexington.
Tennessee, - - -	45,600	1,260,000	Nashville, Memphis.
Alabama, - - -	50,722	1,000,000	Montgomery, Mobile.
Mississippi, - - -	47,156	828,000	Jackson.
Louisiana, - - -	41,346	727,000	Baton Rouge, New Orleans.
Arkansas, - - -	52,198	484,000	Little Rock.
Missouri, - - -	65,350	1,720,000	Jefferson City, St. Louis.
Kansas, - - - -	81,318	364,000	Topeka, Kansas City
Colorado, - - -	104,000	40,000	Denver City.
Texas, - - - -	274,356	818,000	Austin, Galveston.

STATES, TERRITORIES, ETC.—*Continued.*

NAME.	Area.	Population.	TOWNS.
PACIFIC STATES.			
California, - - -	188,981	560,000	Sacramento, San Francisco.
Oregon, - - - -	95,274	91,000	Salem.
Nevada, - - - -	104,125	42,500	Carson, Virginia City.
ORGANISED TERRITORIES.			
Washington, - - -	69,994	37,400	Olympia.
Montana, - - -	143,776	40,000	Helena.
Dakota, - - - -	150,932	40,500	Yankton.
Idaho, - - - -	86,294	20,600	Boisé City.
Wyoming, - - -	97,883	11,500	Cheyenne.
Utah, - - - -	84,476	99,600	Salt Lake City.
Arizona, - - - -	113,916	41,710	Prescott.
New Mexico, - - -	121,291	111,000	Santa Fé.

The *New England States* were chiefly settled by emigrants from England in the reign of Charles I. It is said that owing to Laud's persecution of the Puritans, 20,000 emigrants sought refuge in America during the twelve years which preceded the assembling of the Long Parliament in 1640.

Boston, which may be regarded as the capital of the New England States, is a handsome town, and contains several literary institutions. It has an excellent harbour and its trade is next to that of New York. The exports are chiefly fish, salted meat, flour, and rice. It was the birthplace of Benjamin Franklin (1706). The population is 250,000. In the vicinity is *Bunker's Hill*, the scene of one of the earliest battles in the American War of Independence (1775). **Cambridge**, four miles from Boston, is the seat of the Harvard University. A few miles to the south-east of Boston is *Plymouth*, where the Pilgrim Fathers landed (1620). **Lowell**, about 30 miles to the north of Boston, is the chief seat of the cotton manufacture in America: the population is about 50,000.

New York, the largest city in America, and next to London the greatest commercial city in the world, stands on an island called Manhattan, at the mouth of the Hudson and East Rivers. It is a substantial, well-built city, and its principal street, the *Broadway*, stretches in a direction parallel to the Hudson for a distance of three miles. The imports, which consist chiefly of manufactured articles and colonial produce, amount to about one-third the total value of the entire imports into the United States. The exports consist principally of different sorts of grain, beef, pork, dried fish, furs, and tobacco. The population is nearly 1,000,000. **Brooklyn**, on Long Island, which is in reality a suburb, has a population of 400,000. **Albany** stands on the Hudson, about 140 miles from New York, and the river is navigable nearly all the distance. The scenery in some parts of the river is very beautiful, especially in the neighbourhood of the *Catskill Mountains*. To the north of Albany is *Saratoga*, where General Burgoyne was obliged to capitulate (1777). **Buffalo**, on Lake Erie, is a flourishing commercial town, and has a population of 120,000.

Philadelphia, on the Delaware, near the junction of the Schuylkill, is the second city of the States. It is a handsome town; the streets all cross each other at right angles, and are generally shaded with trees. It has manufactures of cotton, paper, glass, and shot, and a considerable coasting trade. The population is 675,000. The Declaration of Independence was published here in 1776. **Pittsburg**, on the Ohio, stands in the midst of valuable coal mines, and has manufactures of every description of iron: the population is about 90,000. **Baltimore**, on the northwestern side of Chesapeake Bay, is perhaps the third city in the Union. It has a very extensive trade, and is the great flour and tobacco mart of the States. The population is 267,000.

THE CAPITOL, WASHINGTON.

Washington, the capital of the Republic, stands on the River Potomac, about 80 miles from Chesapeake Bay. The city contains some fine public buildings, but is not a place of much importance, except as being the seat of government. The population is about 110,000. **Richmond**, on James' River, which also flows into Chesapeake Bay, was for a time the capital of the Confederate States. Its capture by General Grant in the spring of 1865 put an end to the Civil War. **Charleston** is the chief port in the Southern States; it sustained a famous siege during the Civil War (1863-5). **St. Augustine**, on the east coast of Florida, is the oldest town in the States; it was founded by the Spaniards in 1564. It is now a decayed place.

Cincinnati, on the Ohio, is one of the largest inland towns in the Western States, and has been called the "Queen of the West." It carries on several manufactures, and has an extensive trade. Large quantities of swine, fed in the neighbouring forests, are here slaughtered and cured. The population is 216,000. **Chicago**, on Lake Michigan, is remarkable for the rapidity of its growth. The city was only laid out in 1829, and now it has a population of 300,000. It is the greatest grain mart in the world, and has also a large trade in timber and beef. It is a great railway centre, and commands also extensive water communication. **Louisville**, the chief town in Kentucky, has a population of 100,000.

New Orleans, on the delta of the Mississippi, is the great outlet for the country drained by that river, and exports cotton, flour, and tobacco. The great drawback to the place is its unhealthy situation, especially in the hot season. The inhabitants, who are to a large extent of French or

Spanish descent, number nearly 200,000. **St. Louis**, on the Mississippi, about seventeen miles below the confluence of the Missouri, is the great emporium of traffic for the Central States. It has important factories for iron-working, sugar-refining, and oil-making, and is the great centre of the American fur trade. It commands extensive communication by means of railways and steamboats. The population is 311,000.

San Francisco, on the western side of its bay, and south of the *Golden Gate*, is the chief town in the Pacific States. It has regular intercourse with Japan, China, New Zealand, and Australia, by means of steam packets, and carries on a large coasting trade with Central America. It is also connected with the Eastern States by the inter-oceanic railway, and the fruits of California now find a market in New York. The population is 150,000.

Besides the states and organised territories, the Union includes two unorganised territories: Indian Territory and Alaska.

The **Indian Territory** is a large tract of fertile land between Texas and Kansas, which has been set apart for the Indians who have been removed from the Mississippi States. The country has an area of 69,000 square miles, and is very fertile. Some of the Indians have made considerable progress in agriculture, but the population does not exceed one to a square mile.

The territory of **Alaska** was purchased from Russia in 1867. It lies west of the 141st meridian, and includes also a narrow strip of coast extending southward to the Simpson River. The *Aleutian Islands* are also included in the territory, and the total area is 577,000 square miles. The coast on the south and west is rocky, indented, and skirted with islands; on the north, low, and, in some places, marshy. The Cascade Mountains run through the southern part of the country, and on its borders rise the summits of **St. Elias** and **Fairweather**. The principal river is the **Yukon** or **Kwichpak**, which is about 2000 miles in length. It is navigable throughout the greater part of its course, but is frozen for about eight months in the year. The banks of the Yukon are in many places well wooded with pine, poplar, willow, and birch, and large forests occupy most of the country to the south. To the north of the river, however, the country is barren and bare. The country is chiefly valuable for its fur animals, and there is an important seal fishery on the coast. The population amounts to 70,000, of whom about 500 are whites—chiefly Russians and Americans—and the rest mostly native Indians and Esquimaux. *New Archangel*, on Sitka Island, is the chief station: it has a population of about 1000. *Michaelovski*, on Norton Sound, is also a small trading port.

MEXICO.

Boundaries and Extent.—Mexico extends from the southern boundary of the United States to the peninsula of Tehuantepec, and is bounded on the east by the Gulf of Mexico, and on the west by the Pacific. Its greatest length is about 1300 miles, and its breadth varies from 700 to 140 miles; the entire area is 741,820 square miles.

Mexico includes two peninsulas: *California* in the north-west, and *Yucatan* in the south-east. The coast-line is very extensive, and there are several good harbours, of which those of Tampico, Vera Cruz, Acapulco, and Guaymas are the chief.

Surface and Minerals.—The greater portion of Mexico is a plateau which increases in elevation towards the south. North of the tropic the surface of the plateau is for the most part a barren desert, the soil being largely impregnated with nitre, soda, and other salts, and its elevation ranges from 4000 to 6000 ft. It is bounded on the west by the *Sierra Madre*, which may be looked upon as a continuation of the Rocky Mountains. Further south the table-land increases in elevation, and the soil improves in quality. South of the city of Mexico the surface has an elevation of 7500 ft., and here the plateau is crossed from east to west by a line of volcanic summits, including *Orizaba* (Citlalpetl), *Popocatepetl*, *Jorullo*, and *Colima*. Popocatepetl (*smoking mountain*) is the highest summit in North America. It attains an elevation of 17,800 ft., and Orizaba is almost as lofty. South of this line of heights the table-land rapidly diminishes in elevation, and is succeeded by a low plain which occupies the *isthmus* of *Tehuantepec* and the peninsula of Yucatan. Low plains also separate the coast, on either side, from the interior plateau.

Mexico is extremely rich in minerals, including gold, silver, iron, copper, lead, tin, and quicksilver. The gold mines occur chiefly on the western side of the Sierra Madre; the silver mines are found chiefly between the parallels of 18° and 24°, and are richest in the mountains which rise from the table-lands or fringe them. The most productive vein of silver is that of Guanaxuato. The working of the precious metals, however, has in recent times been carried on very imperfectly, owing to the disturbed state of the country.

Rivers and Lakes.—With the exception of the Rio Grande, which forms a boundary on the north-east, there are no rivers of importance. The largest is the *Rio Santiago*, which rises near the town of Mexico, and after passing through *Lake Chapala* flows into the Pacific. It is 400 miles in length, but is not navigable. In the north there are several salt lakes.

Climate and Production.—With respect to climate the whole country is divided into three regions: the *tierras calientes* (hot lands), the *tierras templadas* (temperate lands), and the *tierras frias*, or cold regions. The first embraces the low plains and the mountain slopes up to 2000 ft.; the second, the mountain slopes between 2000 and 5000 ft.; and the third includes the summit of the plateau and all districts rising above 5000 ft. The climate in the first region is tropical; in the second, warm; and in the third, various, according to elevation. On the summit of the plateau the temperature varies very little all the year round, and extremes of heat and cold are unknown. Rain, however, is very deficient, especially in the northern half of the table-land.

Owing to the diversity of climate there is a great variety in the vegetable productions. It has been said that Mexico is capable of producing all the vegetation found between the tropics and the poles. On the low coast plains indigo, cotton, sugar, and spices are produced, and the forests contain logwood, mahogany, rosewood, ebony, and caoutchouc trees; higher up the mountains the cedar, cypress, and oak are found, and oranges, lemons, olives, and grapes succeed well; higher still we meet with the grains and fruits of central Europe. The greater portion of the surface of the plateau, however, is devoted to pasture. Mexico is famous for its *medicinal plants*, including jalap, sarsaparilla, ipecacuanha, and vanilla. Plants of the *cactus tribe* are also common in the hot arid tracts, and one species affords shelter to the *cochineal* insect, so valuable for its red dye.

The wild animals of Mexico are not numerous. The puma and jaguar are occasionally met with. Herds of buffaloes visit the valley of the Rio Grande during winter in search of pasture, and deer and hares are abundant. Among birds, parrots, mackaws, and humming-birds are found. The lakes abound with fish.

PEOPLE.—The population amounts to 9,000,000, of whom more than one half are Indians, who speak the *Aztec* or old Mexican language. The remaining half is made up of Creoles, or Europeans born in America, chiefly Spanish; and Mestizos or mixed races. The *Creoles* form the wealthy part of the community; the *Indians* are the labouring portion; while the *Mestizos* are principally engaged in mechanical employments, or in trade and commercial pursuits. The government, which is very unsettled, is a republic based upon the model of the United States. The Roman Catholic religion is the only one recognised.

Mexico was conquered by the Spaniards under Cortez in 1521, and remained in connection with Spain for three centuries. In 1810 a struggle for independence commenced, and a constitutional republic was established in 1824. Since that time, however, the government has been very unsettled. Previous to the Spanish conquest the **Aztecs** had made very considerable advances in civilization. They had a settled monarchical government, agriculture and mining were extensively practised, the natives understood the art of writing, and a species of paper was made from the leaves of the aloe. Their knowledge of astronomy enabled them to establish an accurate calendar, and the remains of pyramids, temples, palaces, roads, and bridges attest their knowledge of architecture. Among the numerous remains of ancient civilization found in various parts of the country the most remarkable are those situated near the village of Palerque, in the isthmus of Tehuantepec. They were discovered by accident, nearly concealed by the foliage of a thick forest, in 1750, and include colossal statues and buildings with walls covered with hieroglyphics and figures in relief.

INDUSTRY.—*Agriculture* and *mining* form at present the chief employments of the people, but both are very imperfectly carried on. *Maize* is the staple crop, and excellent wheat is grown on the table-land. Cotton, sugar, tobacco, coffee, and indigo are also produced. There are also large fields of American *aloe*, from which both a fermented liquor and an ardent spirit are manufactured. Large numbers of cattle, sheep, and horses are also reared. The manufactures are of little importance, and consist chiefly of cabinet-work, gold and silver plate, and cotton and silver tissues. The trade also is inconsiderable. The exports consist chiefly of gold and silver as specie, bullion, or plate; drugs, indigo, sugar, cochineal, cattle, hides, and fruits.

TOWNS.—Mexico is divided into 27 states, one federal district, that of Mexico, and one territory, Lower California. Most of the states are named from the chief town in each. Among the more important towns of Mexico are—Mexico, Puebla, Vera Cruz, Xalapa, Tampico, Matamoras, Guaymas, Potosi, Guanaxuato, Guadalaxara, Acapulco, Tehuantepec, Campeachy, and Merida.

Mexico, built on an extensive plain, at an elevation of 7450 ft., is a splendid city, but not so extensive as formerly. It contains several fine public buildings, among which is a university. The population is 205,000. **Puebla**, to the south-east, stands in the vicinity of lofty mountains. It carries on manufactures of glass, earthenware, woollen fabrics, and sword blades. **Vera Cruz**, founded by Cortez, who landed on this part of the coast in 1519, is the chief port in Mexico; it is connected to the capital by rail. **Xalapa** or **Jalapa**, a little further north, gives its name to a beautiful convolvulus—very abundant in the neighbourhood—from the root of which *jalap* is obtained. **Tampico** is the chief outlet for the mineral produce of Mexico. **Matamoras**, about sixty miles from the mouth of the Rio Grande, and at the head of its navigation, exports specie, hides, horses, and wool. **Guaymas**, on the Gulf of California, has an excellent harbour and increasing trade. **Guanaxuato**, north-west of the capital, is the centre of a rich mining district; it has a population of 63,000. **Guadalaxara**, in the valley of Santiago, is perhaps the second city in Mexico; it has a population of 72,000. **Acapulco**, the chief port on the Pacific coast, stands on a fine harbour, but has not so considerable a trade as it had three centuries ago. The town of **Tehuantepec**, which gives its name to a gulf and an isthmus, is the centre of an important pearl fishery. **Campeachy** is the great seat of the logwood trade. **Merida** is the capital of Yucatan.

CENTRAL AMERICA.

CENTRAL AMERICA extends from the isthmus of Tehuantepec to that of Panama, and embraces an area of about 188,000 square miles. The surface is considerably elevated in some parts, and as there is no part at any great distance from the sea, the climate is not so hot as might be expected. The coast on the east side is low and sandy; on the west, steep and rocky. The chief river is the *San Juan*, which drains Lake Leon and Lake Nicaragua. The whole of Central America is rich in mineral produce, and possesses mines of gold, silver, copper, and zinc. The real wealth of the country, however, consists in its vegetable productions, which, besides valuable timber, include cotton, coffee, sugar, indigo, cocoa, and tobacco. The population amounts to 2,600,000, about a quarter of whom are whites, or creoles; the remainder are Indians, or Mestizos.

Central America was conquered by one of the companions of Cortez in 1525, and remained subject to Spain until 1821. It then threw of the Spanish yoke, and a federal republic was established. After some years of civil war, however, the federation was dissolved, and since 1839 the district has comprised the following independent republics: Guatemala, San Salvador, Honduras, Nicaragua, and Costa Rica.

Guatemala consists of a plateau with a mean elevation of 5000 ft. A range of considerable altitude skirts the western side, and there is an abrupt slope to the Pacific; but there is a gentle declivity towards the east. The western range contains several volcanic summits, some of which reach 13,000 ft.; and earthquakes are frequent. The total area is 40,776 square miles, and the population nearly 1,200,000.

The scenery of Guatemala is very beautiful and picturesque, and the country is well watered by numerous streams. The climate is hot and unhealthy near the coasts, but temperate and salubrious in the higher regions. The soil is fertile, and a great part of the country is covered with forests of valuable timber. The chief exports are coffee, cochineal, indigo, sugar, mahogany, sarsaparilla, tobacco, and fruits. The capital, *New Guatemala*, has a population of 40,000. The chief ports are *Istapa*, on the Pacific; and *San Tomas*, on the Bay of Honduras.

San Salvador, the smallest of the Central American States, has an area of 7335 square miles, with a population of 600,000. The surface is rugged and elevated, forming part of the plateau of Guatemala. There are valuable mines of silver and iron. The principal agricultural products are indigo, coffee, cotton, tobacco, sugar, and balsam. The *balsam trees* which grow all along the Pacific coast are very valuable, and yield what is known in commerce as the "balsam of Peru." *San Salvador*, the capital, has a population of 40,000. The chief port is *La Libertad.*

Honduras extends right across the isthmus from the Bay of Honduras to the Gulf of Fonseca, but its western coast-line is only about 40 miles in length. The total area is 47,000 square miles, and the population 350,000. The surface is mountainous and diversified, and the climate tropical. There are extensive forests abounding in mahogany and other valuable timber, and the soil produces cotton, sugar, tobacco, coffee, and indigo. *Mining,* however, forms the chief employment of the people, and the chief mineral products are gold, silver, iron, copper, tin, platinum, zinc, antimony, and asbestos, together with opals, emeralds, amethysts, and other precious stones. *Comayagua,* the capital, has a population of 8000.

Nicaragua, the largest state of Central America, has an area of 58,000 square miles, with a population of 250,000, of whom 20,000 are whites, 20,000 negroes, and the rest Indians and Mestizos. Along the Pacific coast runs a line of volcanoes of no great elevation, except towards the south, where they range from 6000 to 10,000 ft. The central part of the country is occupied by a large plain, in which there are two considerable lakes. *Lake Nicaragua* is about 90 miles long, of considerable depth, and abounds in fish, water-fowl, and alligators. At its northern extremity it is connected with the smaller lake *Leon* by the river Penaloza, and from its southern extremity issues the *San Juan.* The country is in many parts densely wooded, the most valuable trees being mahogany, Brazil-wood, Nicaragua-wood, logwood, and cedar. The soil is extremely fertile, but agriculture is defective. The chief products are indigo, cocoa, cotton, sugar, medicinal plants, and fruits. The pastures are abundant, especially on the east side of the lakes, and support vast quantities of cattle. The northern part of the country is rich in minerals, but they are not worked to any extent. *Managua*, the capital, has a population of about 10,000; but *Leon*, the former capital, is a much larger place. The chief port is *San Juan* or *Greytown*.

It has long been proposed to connect the Atlantic and Pacific by means of an inter-oceanic canal across the isthmus of Central America. The most practicable route seems to be that which, commencing at Greytown, follows the San Juan to Lake Nicaragua. From the northern extremity of this lake the distance to Brito, on the Pacific coast, is only sixteen miles.

Mosquitia, or Mosquito Territory, lies along the coast of the Caribbean Sea. The country abounds in valuable timber; several minerals are said to be met with in the interior, and tortoise-shell of the finest quality is obtained along the coast. The native Indians profess to be independent, but the greater part of the territory has been annexed to Nicaragua. The chief town is *Blewfields*.

Costa Rica contains an area of 21,500 miles, with a population of 185,000. The country is hilly, the climate warm, and the soil fertile. There are valuable mines of gold, silver, and copper, but they are not worked to any extent. The forests abound in mahogany, Brazil-wood, and other valuable timber; and along the coast are found large quantities of mother-of-pearl. The chief export is coffee. *San José*, the capital, has a population of 20,000.

THE WEST INDIES.

THE West India Islands extend from the peninsula of Florida to the mouth of the Orinoco, and are divided into three groups: the Bahamas, the Greater Antilles, and the Lesser Antilles. The Greater Antilles include the four largest islands in the Archipelago: Cuba, Hayti, Porto Rico, and Jamaica. The Bahamas, Jamaica, and most of the Lesser Antilles belong to England. Of the remainder of the Lesser Antilles, St. John, St. Thomas, and Santa Cruz belong to *Denmark;* St. Bartholomew, to *Sweden;* Guadaloupe and Martinique, to *France;* and Curaço and two adjacent islands on the coast of Venezuela, to the *Dutch*. The small island of St. Martin, north-west of St. Bartholomew, belongs partly to France and partly to Holland. The total area of the West Indies is about 95,000 square miles, of which the

Greater Antilles occupy about 80,000. The total population is about 3,500,000.

Cuba, the largest of the West India Islands, belongs to Spain. Its length from east to west is 750 miles, and its area is 43,000 square miles. A range of mountains runs through the length of the island, and in its eastern portion attains an elevation of nearly 8000 ft. *Copper* is very abundant, and gold, silver, and iron are also met with. The population is about 1,500,000, a large portion of whom are slaves. The chief exports are sugar, coffee, and tobacco, along with mahogany, cedar, and other timber, copper-ore, rum, wax, and hides. *Havannah*, the capital, stands near the western extremity of the island, on the north coast. It possesses a fine harbour, and is by far the most important town in the West Indies; the population is 200,000. *Matanzas*, about fifty miles to the eastward, is the next port to Havannah. *Santiago de Cuba*, the old capital, is the chief port in the eastern part of the island; it stands on the south coast.

Hayti, or St. Domingo, is separated from Cuba by the *Windward Passage*, and from Porto Rico by the *Mona Passage*. Its length, from east to west, is 400 miles, and its area is about 30,000. The interior is crossed by several mountain chains, and one summit exceeds 9000 ft. in height. The mountains are clothed with valuable timber, and can be cultivated almost to their summits. The island is perhaps the most healthy and fertile in the West Indies, and it is said to contain mines of gold, silver, copper, tin, and iron. The population is about 700,000, most of whom are negroes. The chief vegetable productions are mahogany, logwood, coffee, cotton, and cocoa, with tobacco, wax, ginger, and sugar. Its excellent harbours afford great facilities for trade, but the unsettled state of the government has almost destroyed its commerce.

At one time the whole island belonged to Spain, but by the peace of Ryswick (1697) the western portion was ceded to France. Towards the close of last century the inhabitants of this portion established the republic of Hayti which, after various vicissitudes, still exists. It has an area of 9232 square miles, with a population of 572,000. In 1844 the inhabitants of the eastern portion established the republic of St. Domingo, which has also succeeded in maintaining its independence, so that at the present time the island is occupied by two independent republics. St. Domingo, though it has twice the area of Hayti, has not one-fourth of its inhabitants. The chief ports are Port au Prince and St. Domingo. *Port au Prince*, the capital of Hayti, stands on a capital harbour, and has a population of 21,000. *St. Domingo* has a population of 7000.

Porto Rico lies to the east of Hayti, and has an area of 3500 square miles. Like the other islands of this group, it is mountainous and rich in minerals. It is the most densely populated of the Greater Antilles, and has 525,000 inhabitants. The island is well cultivated, and the exports include sugar, coffee, rum, tobacco, cotton, and timber. *San Juan*, the capital, has a population of about 20,000. Porto Rico has been in the posession of Spain since the time of Columbus.

British West Indies.

Extent.—The British West Indies comprise the Bahamas, Jamaica, and several islands in the Lesser Antilles. Under this term also is sometimes included the Bermuda Islands and British Honduras. The total area of the British West Indies, exclusive of the Bermudas and Honduras, is 13,000 square miles; and the population amounts to 1,300,000, the greater portion of whom are freed negroes.

CLIMATE.—The Bahama Islands are flat and probably of coral formation; nearly all the other islands of the West Indies are mountainous and of volcanic origin, and some, as St. Vincent and St. Lucia, contain the craters of extinct volcanoes. The shores are generally rocky and deeply indented on the eastern side, where they are exposed to the prevailing winds and oceanic currents. As the islands lie between the parallels of 10° and 28° north latitude, the climate is strictly tropical, but the heat is tempered both by the elevation of the surface, and by the sea breezes. There are two rainy seasons, the first of which commences about April, and the second about July; but as the rains depend upon the course of the sun, the time of their occurrence is not the same for all the islands. The whole group of the Lesser Antilles, with the exception of Trinidad and Tobago, lie in the regions of those hurricanes which sometimes cause such great destruction of property; and earthquakes are more or less common in all the West India Islands. The climate is considered healthy, but during the rainy seasons various kinds of fevers are very prevalent.

PRODUCTIONS.—Vegetation is very luxuriant. The pimento myrtle, the arrowroot plant, the guava, which bears a fruit resembling a pear in shape, and an apple in colour, and the tobacco plant are indigenous. The forests yield mahogany, logwood, and other valuable timber; and plantations of banana and plantain are common. The native fruits include the guava, pine-apple, pomegranate, mango, orange, lemon, and bread-fruit. Among the wild animals may be mentioned the wild hog, monkeys, and huge lizards. There is also a small animal called the agouti, which seems a cross between a rat and a rabbit. The vampire bat is a formidable creature which sucks the blood of animals, and occasionally of man, during sleep. Parrots, humming birds, flamingoes, and other birds of beautiful plumage are met with; caymans or alligators, and turtle are found round the coasts; and serpents and insects abound everywhere.

INDUSTRY.—The chief articles of cultivation are sugar, coffee, cotton, pimento, indigo, ginger, maize, tobacco, and *ground provisions*, under which title are included the yam, manioc, and sweet potato.

Sugar is the staple product of the West Indies; and as, owing to the excessive heat, white men cannot work in the plantations, and the negroes do as little as possible, it has been found necessary, as in Mauritius, to hire coolies from India and China. These labourers engage themselves for a certain number of years, at certain wages, and careful regulations have been drawn up by the British Government to prevent anything like the introduction of slave labour in a new form. The immigration of coolies has been found, upon the whole, to work satisfactorily.

The chief exports from the British West Indies are sugar, molasses or treacle, rum, coffee, cocoa, pimento or allspice, logwood, and mahogany.

The **Bahama Islands** form a group of about 3000 islets, many of them mere rocks, which have a total area of 5000 square miles. The islands, with the exception of *Inagua* which lies at the southern extremity of the group, are low and flat, and generally of a long narrow form. Some are barren, but others are clothed with thick woods of mahogany, satin-wood, lignum vitæ, cedars, and pines. Large quantities of salt, sponges, pine-apples, and oranges are exported to England and the United States. The population is nearly 40,000, about one-fifth of whom are whites. *Nassau,* the seat of government, stands upon a small island called New Providence. *Watling Island,* or San Salvador, was the place where Columbus landed (1492).

Turks Islands, to the east of Inagua, was separated from the Bahamas in 1849, and now forms a flourishing colony, which includes the *Caicos* group which lie to the north-west; the population is nearly 5000. They are governed by a Commissioner who is under the orders of the Jamaica government.

Jamaica, the most important of the British West India Islands, lies to the south of Cuba. It measures about 140 miles from east to west, with an average breadth of from 30 to 40 miles, and has an area of 6400 square miles. The country rises by terraces from the coast to the interior, where the central ridge, called the **Blue** Mountains, stretches from east to west, and, in **Western Peak,** reaches an elevation of 7335. From this central ridge, at least seventy streams descend to the sea, but the only navigable one is the **Black River,** which empties itself on the south-west coast. The population is 506,000, of whom three-fourths are negroes, and a large proportion mulattoes. The exports are chiefly sugar, rum, coffee, logwood, and pimento. The imports are articles of British manufacture, salt fish, ale and porter. Several articles of British produce are re-exported to Cuba and the neighbouring countries. *Kingston* is the chief port and seat of government. *Spanish Town* was the former capital.

The three small islands lying to the north-west of Jamaica called **Grand Cayman, Little Cayman,** and **Cayman Brack** respectively, belong to Britain; and along with Turks Islands are dependencies of Jamaica. The diocese of Jamaica includes Honduras.

The Lesser Antilles extend in the form of a crescent from Trinidad to the Virgin Islands, and, excluding Trinidad, they are divided into the *Windward* and *Leeward* groups, the former lying to the south of Dominica, and the latter including the rest of the islands.

Trinidad, the largest of the Lesser Antilles, is separated from the coast of South America by the Gulf of Paria. On the north-west and south-west, the island approaches very close to the mainland, and the two channels are known respectively as the *Dragon's Mouth*, and the *Serpent's Mouth*. The island, which has an area of 1754 miles, is crossed by three parallel ranges of hills well clothed with timber, which are separated from each other by extensive grassy plains. Near the south-west coast is a lake of boiling pitch, about a mile and a half in circumference. Coal has been found in one part of the island. Among the wild animals are opossums, armadilloes, porcupines, sloths, ant-eaters, tiger-cats, and monkeys; and among birds, parrots, flamingoes, pelicans, vultures, vampires, as well as woodcocks and partridges. The population amounts to 110,000, the few whites being chiefly of Spanish descent. The chief products are sugar, molasses, rum, cocoa, coffee, various kinds of timber, choice fruits, and coal. *Port of Spain*, the capital, is one of the finest towns in the West Indies, and has a population of 22,000. *St. Fernando*, 26 miles to the south, has a population of 6000. The government is vested in a Governor, an Executive Council, and a Legislative Council.

The **Windward Islands** include Tobago, Grenada, Barbadoes, St. Vincent, and St. Lucia. Each island has a governor of its own, but it has been proposed to form the whole group into a federal colony, with Barbadoes at the head. The total population is 285,000.

Tobago lies about 18 miles north of Trinidad; two-thirds of the island are covered with forests, comprising many varieties of hardwood and ornamental trees. **Grenada** is one of the most beautiful islands in the group, and abounds with streams. **Barbadoes** lies a little to the east of the rest of the islands, and the climate is considered the healthiest in the West Indies. The surface is diversified and picturesque; the woods have been in a great measure cleared away, and wild hogs are almost the only wild animals met with. The population amounts to 162,000. The staple productions are sugar and arrowroot; and the capital is *Bridgetown*. Next to Jamaica, Barbadoes is perhaps the most valuable of the British possessions in the West Indies. **St. Vincent** lies 90 miles to the west of Barbadoes. It contains a volcanic summit where an eruption took place in 1812. **St. Lucia**, the largest of the Windward Islands, lies to the north of St. Vincent. It also has a volcanic crater.

The **Leeward Islands** include Dominica, Montserrat, Nevis, St. Christopher, Antigua, Barbuda, and the Virgin Islands. They form one federal colony, with a population of 120,000. The governor-general resides at Antigua.

Dominica is the loftiest of the Lesser Antilles. The island is mountainous and picturesque, but only a small portion of it is capable of cultivation. The principal productions are sugar, coffee, cocoa, cotton, tobacco, copper ore, and cabinet woods. **Montserrat** is healthy and beautiful. About two-thirds of the surface is mountainous and barren; the rest well cultivated. The chief product is sugar; but cotton, tamarinds, and arrowroot are also exported. **Nevis** consists of a single mountain 3200 ft. in height. Its area is 20 square miles, of which less than one-half is capable of cultivation. **St. Christopher**, or St. Kitts, as it is popularly called, is almost as mountainous. *Anguilla*, which lies 60 miles to the north-east, is a dependency. **Antigua**, the most important of the Leeward Islands, has an area of 108,000 square miles, and a population of 35,000. The chief products are sugar and cotton, and the chief town is *St. John*. *English Harbour*, on the south coast, is an important naval station, and one of the best harbours in the West Indies. **Barbuda**, to the north of Antigua, is low, level, and fertile; and well covered with woods which are stocked with deer and game. No sugar is grown, and the inhabitants are chiefly engaged in breeding cattle. The island is a dependency of Antigua. The **Virgin Islands** comprise about one hundred small islets, the largest of which is *Tortola*. They belong partly to England and partly to Denmark. The principal islands belonging to Britain are Tortola, Virgin Gorda, and Anegada. There is good pasturage for cows, sheep, and goats. A valuable copper mine has been worked at Virgin Gorda, and gold, silver, and other minerals are said to have been found.

The Bermudas.

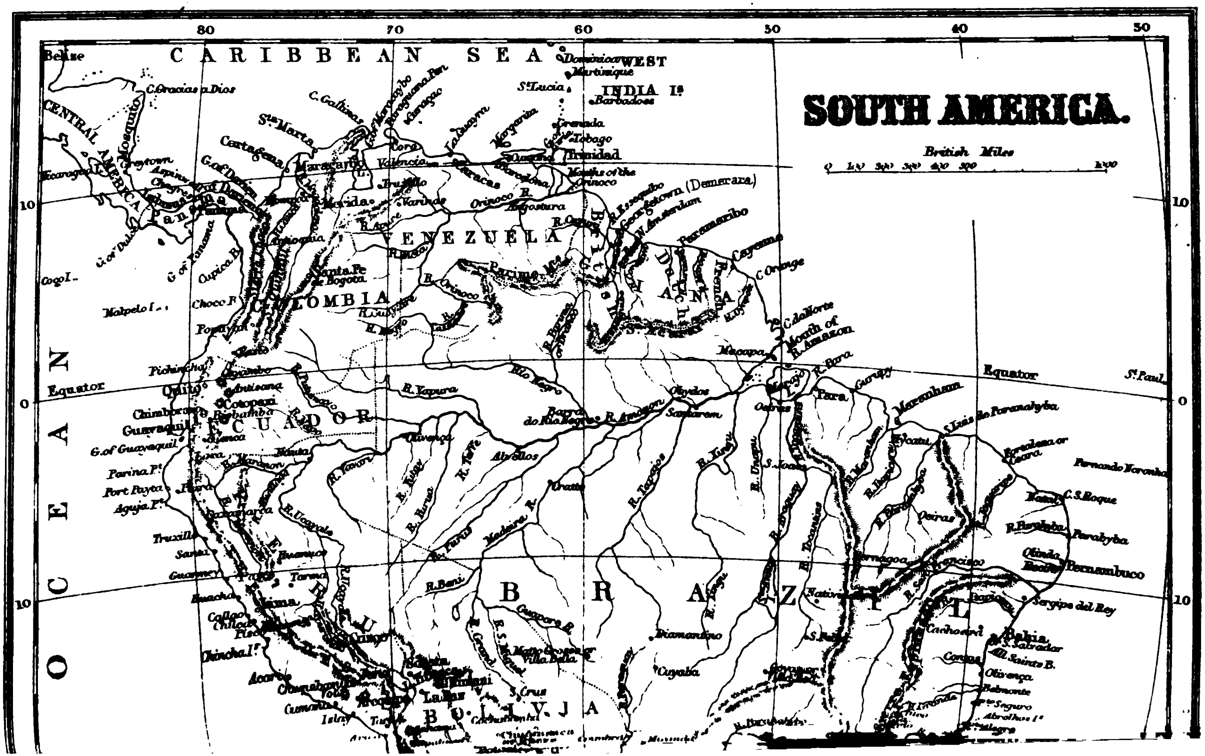
The Bermudas, or Somers Islands, consist of a group of about 300 islands, lying 580 miles south-east of Cape Hatteras. Only sixteen are inhabited; the largest, Bermuda proper, on which *Hamilton*, the seat of government, is situated, has an area of 20 square miles. The islands are low and flat; the soil fertile, and the climate a perpetual spring. The products are chiefly *arrowroot* of a very fine quality, bananas, oranges, peaches, and other fruits. Ireland Island has a strongly fortified dockyard where the North American squadron refits. The population is 12,000. The government is similar to that of our other West Indian colonies, the islands are included in the diocese of Nova Scotia.

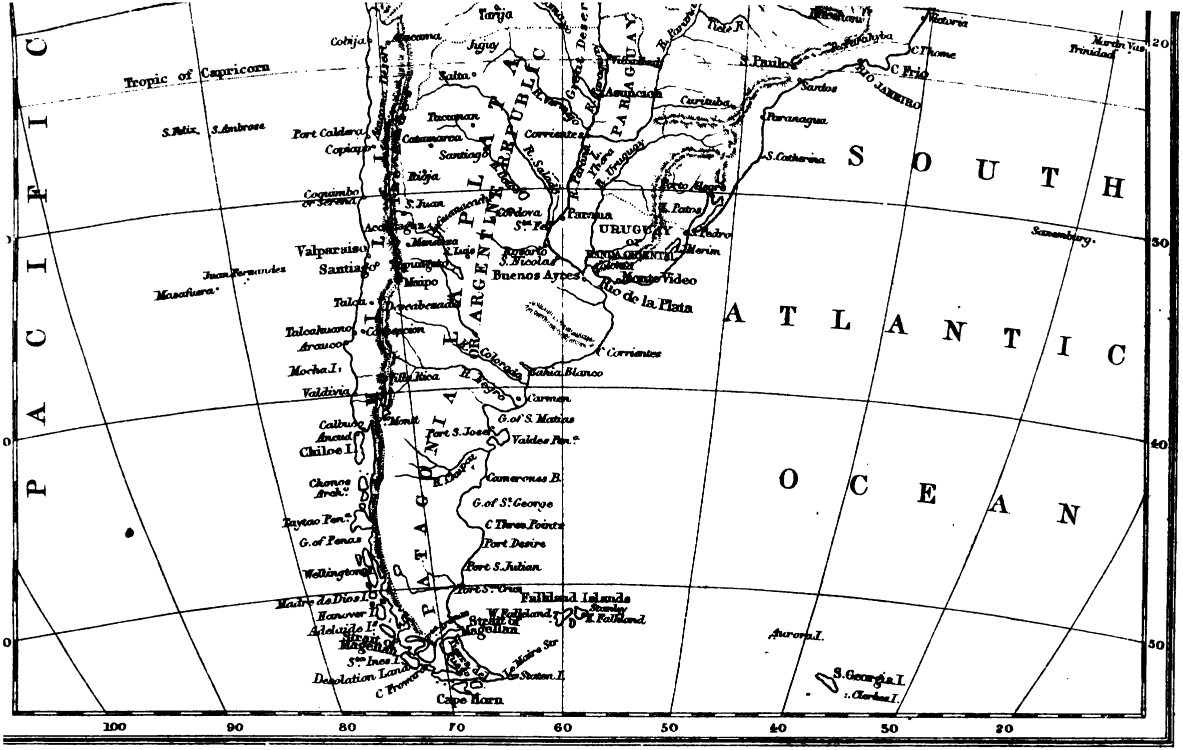
Honduras.

British Honduras is bounded on the north and north-west by Yucatan; on the south and south-west by Guatemala; and on the east by the sea. It has an area of 9000 square miles, with a population of 24,700. The sea-coast is low and swampy, but the country rises in the interior to a height of 4000 ft.; and the chief river is the **Belize**. The greater part of the country is covered with forests containing mahogany, logwood, iron-wood, and other valuable timber. The wild animals include panthers, tapirs, armadilloes, ounces, and monkeys. The population consists chiefly of negroes, who are engaged in cutting down the timber and in the fisheries; the white people are chiefly engaged in commerce. The exports include mahogany, logwood, sugar, tortoise-shell, indigo, sarsaparilla. *Belize*, the seat of government and the centre of trade, stands at the mouth of the river of that name; it has a population of 6600.

fine
eland
orth
The
dian
otia

vest
ala;
are
low
ght
ter
ng
er.
es.
of
n


SOUTH AMERICA.
British Miles
CARIBBEAN SEA
WEST INDIA Is
OCEAN
Equator
VENEZUELA
COLOMBIA
ECUADOR
PERU
BOLIVIA
BRAZIL
GUIANA
British
Dutch
French
CENTRAL AMERICA
Panama
Trinidad
Barbadoes
Tobago
Grenada
St. Lucia
Martinique
Dominica
Belize
C. Gracias a Dios
Mosquito
Greytown
Cartagena
Sta. Marta
C. Gallinas
Maracaibo
Caracas
Cumana
Barcelona
Orinoco
Angostura
Mouths of the Orinoco
Georgetown (Demerara)
Paramaribo
Cayenne
C. Orange
C. del Norte
Mouth of R. Amazon
Macapa
Para
Maranham
Pernambuco
Olinda
Bahia
S. Salvador
Sergipe del Rey
C. S. Roque
Fernando Noronha
Parahyba
Santa Fe de Bogota
Popayan
Quito
Chimborazo
Cotopaxi
Riobamba
Guayaquil
G. of Guayaquil
Cuenca
Loxa
Parina Pt.
Port Payta
Aguja Pt.
Piura
Truxillo
Santa
Guarmey
Huacho
Lima
Callao
Chilca
Pisco
Chincha Is.
Tarma
Cuzco
Acari
Arequipa
Islay
La Paz
S. Cruz
Matto Grosso or Villa Bella
Cuyaba
Diamantino
Cachoeira
Olivença
Belmonte
Abrolhos Is.
R. Yapura
R. Negro
R. Amazon
R. Madeira
R. Purus
R. Tapajos
R. Xingu
R. Tocantins
R. Ucayale
R. Beni
R. Guaporé
R. Paraná
S. Francisco
Obydos
Santarem
Barra do Rio Negro
Olivença
Equator
St. Paul
Cocos I.
Malpelo I.
Choco R.
G. of Darien
G. of Panama
80
70
60
50
40
10
0


PACIFIC
SOUTH ATLANTIC OCEAN
Tropic of Capricorn
ARGENTINE REPUBLIC
PARAGUAY
URUGUAY
PATAGONIA
Tarija
Cobija
Jujuy
Salta
Tucuman
Catamarca
Santiago
Rioja
S. Juan
Cordova
Parana
Corrientes
R. Salado
Asuncion
S. Paulo
Santos
C. Frio
Rio Janeiro
C. Thome
Victoria
Martin Vas
Trinidad
Paranagua
Curitiba
S. Catherina
Porto Alegre
L. Patos
S. Pedro
L. Merim
Monte Video
Rio de la Plata
Buenos Ayres
S. Nicolas
Rosario
Mendoza
S. Luis
Aconcagua
Valparaiso
Santiago
Maipo
Talca
Talcahuano
Concepcion
Arauco
Mocha I.
Valdivia
Villa Rica
R. Colorado
Bahia Blanco
C. Corrientes
R. Negro
Carmen
G. of S. Matias
Port S. Josef
Valdes Pen.
Calbuco
Ancud
Chiloe I.
Chonos Arch.
Camerones B.
G. of St. George
C. Three Points
Port Desire
Port S. Julian
Port S. Cruz
Taytao Pen.
G. of Penas
Wellington
Madre de Dios I.
Hanover I.
Adelaide I.
St. Ines I.
Desolation Land
Strait of Magellan
Falkland Islands
W. Falkland
E. Falkland
Stanley
Le Maire Str.
Staten I.
Cape Horn
Aurora I.
S. Georgia I.
Clerkes I.
Saxemburg
S. Felix
S. Ambrose
Juan Fernandes
Masafuera
Port Caldera
Copiapo
Coquimbo
or Serena
100
90
80
70
60
50
40
30
20
50
40
30
20

William Collins, Sons & Co. London & Glasgow.

SOUTH AMERICA.

BOUNDARIES AND EXTENT.—South America is bounded on the north by the Caribbean Sea; on the east by the Atlantic; on the west by the Pacific. Its length, from the Isthmus of Panama to Cape Horn, is about 4000 miles; its greatest breadth, from Cape San Roque to Cape Parina, is about 3000 miles; and the total area is 7,000,000 square miles.

Cape Gallinas, the most northerly point, lies in lat. 12° 25′ north; **Cape Froward**, the southern termination of the mainland, is 53° 54′ south latitude; **Cape Horn** is the most southern point in the islands of Tierra del Fuego. The most easterly point in the continent is **Cape Branco**, in 34° 50′ west longitude; and Cape Parina, the most westerly point, is in lon. 81° 18′ west. It will be seen, from the peculiar shape of the continent, that the greater portion of it lies within the tropics.

COUNTRIES.—The following is a list of the countries of South America, with the area, population, and capital of each state:—

COUNTRIES.	Area in Sq. Miles.	Population.	CAPITAL.
ECUADOR, - - -	248,380	1,300,000	Quito.
COLOMBIA, - - -	320,750	3,000,000	Santa Fé de Bogota.
VENEZUELA, - - -	403,276	1,784,000	Caracas.
BRITISH GUIANA, - -	85,000	200,000	Georgetown.
DUTCH GUIANA, - -	38,500	60,000	Paramaribo.
FRENCH GUIANA, - -	27,000	25,000	Cayenne.
BRAZIL, - - - -	3,288,000	10,200,000	Rio de Janeiro.
PERU, - - - -	503,380	3,374,000	Lima.
BOLIVIA, - - -	500,870	2,000,000	La Paz.
PARAGUAY, - - -	56,700	221,000	Ascencion.
URUGUAY, - - -	70,000	450,000	Monte Video.
ARGENTINE STATES, -	838,600	1,877,500	Buenos Ayres.
CHILI, - - - -	126,060	2,074,000	Santiago.
PATAGONIA, - - -			

COAST-LINE.—The coast of New Granada and Venezuela, washed by the Caribbean Sea, is for the most part low and marshy, but is backed by mountain ranges which rise 3000 or 4000 ft. in height. Between Aspinwall and Panama, where the isthmus is crossed by a railway, the distance is about thirty miles. To the east of the isthmus is the *Gulf of Darien*, and then the coast trends north-east to Point Gallinas, the most northern point in the continent. Rounding the Cape we reach the Gulf of Venezuela, which communicates by a narrow channel with a large expanse of water known as the Lake of Maracaybo, which has an area of 7800 square miles. On the eastern side of the gulf is the Peninsula of Paraguana.

The coast of Venezuela is skirted by numerous islands, among which may be mentioned Oruba, Curaçao, and Buen Ayre, which belong to the Dutch; Tortuga, Orchilla, Blanca, and Margarita, which belong to the Republic of Venezuela; and Trinidad, which belongs to Great Britain. The island of Margarita was formerly celebrated for its pearl fishery.

From the *Gulf of Paria*, between Trinidad and the mainland, to Cape San Roque the coast trends to the south-east, and is low and swampy throughout the whole distance. In Guiana, indeed, embankments are necessary to keep back the sea. The chief opening in this part of the coast is the estuary of the Amazon, which is divided into two parts by the island of Marajo. The channel on the south and east of the island is known as the Rio Para. *Cape Branco*, to the south of Cape Roque, is the most easterly point in south America. From this point to the Strait of Magellan, the coast runs with a general direction to the south-west. For a considerable distance the coast continues to be low and swampy; but in the neighbourhood of *Cape Frio* the shores assume a bolder character, and the remainder of the coast of Brazil is rocky and picturesque. The coast of Brazil possesses some noble harbours, among which may be mentioned those of Bahia and Rio de Janeiro. The extreme south of the Brazilian coast, and the shores of Uruguay, are low and sandy, and in some places the coast is lined with salt-lagoons. The estuary of the La Plata is 130 miles in width, and 180 miles in length; but owing to variable winds and currents, navigation is very difficult. South of the La Plata there is no harbour of importance, and the coast of Patagonia is barren, rugged, and inhospitable.

The **Strait of Magellan**, named after the celebrated Portuguese navigator, is a winding channel about 400 miles in length. Due east of the entrance are the Falkland Islands, which belong to Britain. To the south of the channel is the group of *Tierra del Fuego*. This group consists of the large island which gives name to the group and a number of smaller ones. *Beagle Channel* separates the island of Tierra del Fuego from Hoste Island and Navarin Island; the *Strait of Le Maire*, from Staten Island. **Cape Horn**, on a small island at the southern extremity of the group is a very conspicuous object. It consists of a high precipitous black rock, utterly destitute of vegetation, and running far out into the sea. The strong westerly gales which prevail in the neighbourhood render it difficult to be doubled from the east. It was discovered in 1616 by Schouten, the Dutch navigator, who named it after Hoorn, his native place.

The southern coast of Chili bears a considerable resemblance to the west coast of Norway: the mountains rise up abruptly from the shore, and the coast is rugged, deeply indented, and skirted with numerous islands. Among these islands are the Chiloe Island, the Chonos Archipelago, Wellington Island, Hanover Island, and Queen Adelaide Island. To the north of Wellington Island is the Gulf of Penas, which has for its northern boundary a curiously-shaped mass of land called the *Peninsula of Tres Montes* (Three Mountains). *Chiloe*, which is separated from the mainland by Corcovado Gulf, is fertile and well watered, and supports abundance of cattle. To the north of Chiloe the coast is much less indented, and the islands are scarce and small, but the shores, with here and there an exception, still continue rugged and lofty, owing to the proximity of the mountains to the sea.

About 300 miles due west of Valparaiso is the island of **Juan Fernandez**, which is interesting to us as being the solitary residence of Alexander Selkirk for four years. He returned to England in 1709, and the account of his adventures, which was published shortly afterwards, suggested to Daniel Defoe his story of "Robinson Crusoe." The island is of volcanic formation, has a diversified surface, and is covered with abundant vegetation. When visited by the *Challenger* in 1875 some goats were found, which are supposed to be descendants of those possessed by Selkirk himself.

The coast district of the northern part of Chili and the southern part of Peru is occupied by the *Desert of Atacama*, a sandy tract, where rain never falls. From the Straits of Magellan to the town of Arica the shore line runs almost due north; it then bends to the north-west, and continues in that direction as far as Point Parina. The *Chincha Islands*, found a little south of Lima, are celebrated for their rich deposits of guano. There are few good harbours either in Chili or Peru, and the constant swell of the Atlantic causes a powerful surf. Payta, however, has a good port, but a still finer one is that of Guayaquil, on the coast of Ecuador. The whole coast of Ecuador is rugged and indented, and among the numerous headlands are Point St. Helena, Cape San Lorenzo, and Cape San Francisco. On the coast of New Granada is the *Gulf of Panama*, in which are the Pearl Islands. On the western side of the gulf is a peninsula which terminates on the south-east in *Point Mala*, and on the south-west in *Point Mariato*.

SURFACE.—The surface of South America is very simple in its structure. The great chain of the Andes runs close to the west coast from the Isthmus of Panama to Cape Horn, and the extensive plains lying to the east are divided into three parts by the mountains of Guiana and the mountains of Brazil. The three divisions of low land are known respectively as the region of the Llanos, the region of the Selvas, and the region of the Pampas.

The *Andes* commence in the Archipelago of Tierra del Fuego, and run northward as a single chain to the borders of Peru. North of that point we have a double range, which continues as far as 2° north latitude, where the system becomes triple—one range runs along the coast, the second divides the Magdalena from the Cauca, while the third, after running for some distance to the north, turns eastward through Venezuela and terminates to the north of the Gulf of Paria. The chief summit in the range last mentioned is the *Silla de Caracas*, which attains an elevation of 8600 ft. The isolated summit of *Santa Marta*, about 18,000 ft. in height, may be considered an outlier of the eastern chain.

The culminating summit of the Andes, and indeed of the New World, is **Aconcagua**, which rises in the neighbourhood of Valparaiso to the height of nearly 24,000 ft. The parallel ranges of the Andes, which extend through Bolivia, Peru, and Ecuador, enclose high mountain valleys or plateaus, which are divided from each other by transverse chains or mountain "knots." Two of these table-lands are those of Titicaca and Quito. The *Plateau of Titicaca* extends northward from the neighbourhood of Potosi for a distance of 400 miles, with a breadth varying from 30 to 60 miles. The average elevation is 13,000 ft., and several peaks on each side rise 8000 ft. higher. The range on the western side is called the Cordillera of the coast; that on the eastern side, the Bolivian Cordillera; and in the latter rise the summits of **Illimani** and **Sorata**, both of which exceed 21,000 ft. The northern part of the plateau is occupied by *Lake Titicaca*, which has an area of about 4000 square miles. It is drained by the Desaguadero, which flows southward into a small salt lake.

The *Plateau of Quito*, one of the finest in the Andes, is about 200 miles long and 30 wide, and has an average elevation of 10,000 ft. The Cordillera, which bounds it on the east, contains the summits of **Antisana** and **Cotopaxi**, both active volcanoes. In the western range rises **Chimborazo**, another volcanic summit, while directly upon the equator rises the **Nevada of Cayambe**. All these summits approach 20,000 ft. in elevation, and Chimborazo exceeds 21,000. The city of Quito stands on the side of **Pinchinca** at an elevation of 9500 ft. The climate is a perpetual spring, the soil is fertile, and the city has a population of 70,000 inhabitants.

The mountains of Guiana rise from a plateau of not more than 2000 ft. in elevation, which is enclosed by the Amazon, the Rio Negro, and the Orinoco. This plateau is crossed by several parallel ranges, which nowhere rise more than 6000 ft. above its surface. The chief range is the *Sierra Parima*, which culminates, in its western part, in *Mount Maravaca*, 8200 ft. in height. *Mount Roraima*, in the eastern part of the chain, is of almost equal elevation. All the mountain ranges are clothed with forests.

The table-land of Brazil has an elevation of about 2500 ft., and is crossed by low ranges, most of which run from north-east to south-west. The range nearest the coast, and thence called the *Sierra do Mar* (mountains of the sea), commences in the neighbourhood of Rio de Janeiro, and runs for a considerable distance to the south. Next to this, and joining on to it about the parallel of 22° 30′, is the *Sierra Espinhaço*, which runs northward to the mouth of the San Francisco, and contains *Itambé*, the culminating summit, which, however, scarcely reaches 6000 ft. West of the San Francisco is the *Sierra Tabatinga*, and still further west the *Cordillera Grande*.

The **llanos**, which lie to the north of the mountains of Guiana, occupy an area of 153,000 square miles, and are almost an unbroken level of grassy plains. In the rainy season they are flooded, but when the water has subsided the ground is covered with a rich verdure, which becomes parched and burnt up as the dry season advances. The **selvas**, or forest plains, extend from the parallel of 7° north to that of 18° south, and embrace nearly the whole basin of the Amazon. Almost the whole of this vast area is heavily timbered, and the trees are so matted together by creeping and parasitical plants, that the country can only be penetrated by sailing up the Amazon or its tributaries, or by cutting a pathway with the axe. South of the selvas is the region of the pampas; but the pampas properly so called are confined to the district which extends from the parallel of 33° to the river Colorado. To the north of this district and west of the Paraguay is the desert of *El Gran Chaco*, a great portion of which is a sandy tract covered in some places by incrustations of salt. The **pampas** are extensive plains covered, after the rainy season, with a rich clothing of grass. In spring the verdure withers, and large thistles spring up to the height of ten feet. During the heat of summer the stalks are dried up and withered, and the strong winds of autumn level them to the ground. Then follows the rainy season, and the grass springs up again. These pampas support enormous numbers of wild horses and cattle. South of the Colorado the country is a shingly desert covered with brine lakes and saline incrustations, and only occasionally diversified by tufts of grass and a few prickly shrubs.

MINERALS.—South America is exceedingly rich in minerals. The *diamond* is found in Brazil, the *emerald* in New Granada, and other precious stones in Peru and Chili. *Gold* is abundant in Brazil, New Granada, and Bolivia; and *silver*, in Peru, Bolivia, New Granada, and La Plata. *Iron* is found in Brazil, New Granada, Bolivia, and Chili, and in the southern provinces of Chili there are considerable *coal-*

fields. *Copper* and *lead* are found in Chili, Peru, and La Plata. *Platinum* occurs in Brazil, *quicksilver* in Peru, and *zinc* in Chili. *Tin* has been discovered in Chili and Peru; and *salt* in La Plata and Bolivia.

RIVERS.—The three great rivers of South America are the Orinoco, the Amazon, and the La Plata, which drain the region of the llanos, selvas, and pampas respectively. Besides these there are the *Magdalena* in New Granada; the *Essequibo*, *Corentyn*, *Surinam*, and *Maroni*, in Guiana; the *Maranhao*, *Paranahyba*, *San Francisco*, *Belmonte*, and *Parahyba*, in Brazil; and the *Salado*, *Colorado*, and *Negro*, in the La Plata States.

The **Orinoco** rises in the south side of the Parima Mountains, and its course is at first westerly. Near Esmeralda it is joined by the Cassiquiare, which unites with the Rio Negro, an affluent of the Amazon. After receiving the Guaviare its course is northward for a considerable distance, and it is augmented by several streams on its left bank. Turning now to the east it becomes a broad and navigable river, and at a distance of 560 miles from its mouth has a width of three miles. Near the town of Angostura, however, the river is not more than 710 yards broad, being hemmed in by rocks, but below the town it expands again and contains several islands. The delta begins to form 130 miles from the sea. The length of the Orinoco is about 1400 miles, and the area of its basin has been estimated at 300,000 square miles. The annual rise of the river, caused by the tropical rains, commences immediately after the vernal equinox, but the rise at first is very gradual. It attains its highest level in July when the plains to the north and west are flooded. Towards the end of August the river begins to fall, and in February reaches its lowest ebb.

The **Amazon** is formed by the junction of the Marañon and Ucayali. The Marañon has its source in a small lake on the plateau of Pasco, and flows north-west and then east. The Apurimac, the principal head stream of the Ucayali, rises in the table-land of Cuzco, about 90 miles west of Lake Titicaca. The total length of the Ucayali, from the source of the Apurimac to the junction with the Marañon, is 1200 miles. From this point the Amazon flows, with a general easterly direction, for 3000 miles before it reaches the Atlantic. More than twenty of its feeders are at least 1000 miles in length, and these flow mainly from the south. Among them may be mentioned the Purus, Madeira, Tapajos, Xingu, and Tocantins. The largest tributary is the Madeira, which is formed by the junction of the Guapore and Beni. The Guapore rises within three miles of one of the head streams of the Paraguay, and the Beni rises on the plateau of Titicaca. The total length of the Madeira exceeds 2000 miles.

Among the northern tributaries of the Amazon are the Napo, Japura, and Rio Negro: the Negro is about 1400 miles in length. Between the mouths of the Negro and Madeira the Amazon is three miles wide, and it increases in width nearer the sea. About 100 miles from the sea the river throws off a branch which encircles the island of Marajo, the channel being known as the River Para. The Amazon empties itself by a large estuary which contains numerous islands. The mouth of the estuary is 180 miles wide, and in the entrance lies the island of Caviana. Such is the strength of the stream and the volume of water brought down by this mighty river that the current sweeps onward and unmixed with the waters of the ocean for a distance of 200 miles from the shore. The total length of the Amazon, measured from the source of the Ucayali, is 4700 miles, and the area of its basin is 2,500,000 square miles.

The Amazon is navigable by steamers of 1000 tons burthen as far as the mouth of the Ucayali, and the tide is clearly perceptible at Obydos, 400 miles inland. At the spring tides, but especially at new moon, the phenomenon called the *bore* is often seen. This is caused by the Atlantic tidal wave meeting the strong current of the river. Two, three, and sometimes four enormous waves sweep up the channel of the river accompanied with a roar that is heard at a distance of four or five miles.

The **Rio de la Plata** is formed by the junction of the Parana and Uruguay. The **Parana** rises near the southern extremity of the Sierra Espinhaço, and after flowing 1000 miles is joined at Corrientes by the Paraguay. Not more than 100 miles of this length, however, is navigable, since the course of the Parana is much interrupted by falls and rapids. The Paraguay rises in Brazil, in the province of Matto Grosso, and flows through a marsh sometimes called *Lake Xarayes*. This district, as large as Lake Superior, is covered after heavy rains with water to the depth of ten or twelve feet, but after the rainy season it becomes quite dry. The river flowing south is joined on the right bank by the Pilcomayo and Vermejo—the former a very considerable stream, though much of its water is absorbed in passing through El Gran Chaco. Below Corrientes the Parana flows southward, and is joined on the right bank by the Salado. Turning now to the south-east the Parana enters the estuary of the La Plata.

The **Uruguay** rises about 80 miles from the coast, and flows for the most part in a southerly direction. It joins the Parana after a course of about 800 miles, and its clear blue waters may be distinguished from the muddy waters of the Parana for miles after their confluence. The estuary of the Rio de la Plata is 185 miles long, and 130 wide at its entrance. The depth is not great, and navigation is rendered difficult by dangerous shoals, strong currents, and the violent gales to which it is exposed. Little or no tide has been noticed. The total length of the La Plata, measured from the source of the Paraguay, is about 2459 miles, and the area of its basin is 1,250,000 square miles.

Climate and Productions.—The average temperature of South America is rather high, since a great portion of it lies within the tropics. The countries of the northern part of the continent, as well as a large portion of Brazil, have a strictly tropical climate, and the average annual temperature is 80°, or even higher. Farther south the temperature of course decreases, and near the mouth of the La Plata it is about 60°. Contrary to the general rule, the west coast of South America is colder than the east coast; this is probably owing to the cold current which washes the west coast, and which, off Lima, has a temperature of 20° below that of the surrounding waters. The temperature of course decreases with the elevation, and on the plateaus of the Andes a European climate is experienced. The great plains of South America are, upon the whole, well watered, as they are open to the trade-winds of the Atlantic. On the Pacific coast, however, between the parallels of 22° and 28° south, scarcely any rain falls. The arid nature of this district, known as the *Desert of Atacama*, is doubtless owing to the altitude of the Andes, which deprive the trade-winds of every drop of their moisture.

A moist and warm climate is favourable to vegetation, and hence South America is distinguished by its gigantic forests, luxuriant grasses, and beautiful flowers. The chief forest trees of the tropical parts include mahogany, logwood, Brazil-wood, and numerous palms; and the slopes of the Andes, between the parallels of 5° north and 20° south, are clothed with the valuable **cinchona** tree. Higher up in the mountains flourish oaks, pines, and other trees of temperate climates. Large forests of handsome pines cover the Andes of Chili, and Patagonia; and the islands of Tierra del Fuego are remarkable for their valuable timber and the abundance of evergreen plants.

South America is not so well represented in the animal as in the vegetable kingdom. The elephant, rhinoceros, lion, and tiger of the old world are represented by the tapir, peccary, puma, and jaguar, which are neither so large nor so fierce. The order of **edentata**, however, which includes the sloth, anteater, and armadillo, is almost peculiar to this continent. The opossum, a marsupial animal which wanders all over the continent and as far north as the state of Virginia, is unrepresented in Europe, Asia, and Africa. The monkeys of South America are distinguished from those of the old world by having prehensile tails. The **llama** and **alpaca**, which dwell among the heights of the Andes, are peculiar to South America, and represent the camel of the old world. They are used as beasts of burthen, and are covered with a fine wool. The **chinchilla**, a a small animal found in the southern portion of the Andes, is celebrated for its delicate fur. Among birds may be mentioned the gigantic **condor** of the Andes; the ostrich, or emu, which dwells in the plains of the pampas; and the **humming-bird**, which, although most numerous in Guiana and Brazil, has been seen as far south as Tierra del Fuego. Other birds of brilliant plumage inhabit the forests of tropical America, among these should be mentioned the **toucans**, with large bills, which are often beautifully coloured. Reptiles and insects are exceedingly numerous in this continent, and the huge **boa-constrictor** is peculiar to the tropical forests of South America.

People and Religion.—As in North America, the population consists of Europeans, Indians, negroes, and mixed races; but the white population does not amount to more than one-third of the total number of the inhabitants, there being a preponderance of Indian and mixed races. The mixed races are divided into *Mulattos*, the offspring of whites and negroes; *Mestizos*, of whites and native Indians; and *Zambos*, the descendants of Indians and negroes. The white population is chiefly of Spanish descent, except in Brazil, which was colonised by the Portuguese. The Roman Catholic religion is established by law in most of the states. The total population of South America is about 30,000,000.

ECUADOR.

ECUADOR is bounded on the south by the Amazon, and on the north a part of the boundary is marked by the Yapura, a feeder of that river. On the east it stretches to the 70th meridian, and on the west it is washed by the Pacific. The total area is estimated at 248,380 square miles. Near the southern border of the country is the mountain knot of Loxa, and from thence northward to Pasto the Andes consist of a double chain. The country thus enclosed is divided into three portions by cross ridges: the Plateau of Cuença, that of La Tapia, and the Valley of Quito. The elevated plains of Cuença and La Tapia are of little interest: they are covered with a scanty vegetation of brown grass, and exposed to furious winds and hailstorms. The valley of Quito, on the other hand, is exceedingly fertile, and has a climate of perpetual spring. The narrow slope on the Pacific side is for the most part well watered, and the plains to the east of the mountains, drained by various affluents of the Amazon, are of great fertility, and are covered with forests and grassy savannahs.

Ecuador is not so rich in minerals as either Peru or New Granada, but gold, lead, iron, quicksilver, copper, and emeralds are met with; and sulphur abounds near Chimborazo. The climate, except among the mountains, is strictly tropical. There are extensive forests yielding valuable timber, including palms and arborescent ferns. The cinchona, from which Peruvian bark is obtained, grows abundantly in the neighbourhood of Loxa, at an elevation of from 5000 to 7000 ft. In the lower valleys cocoa, indigo, cotton, and cacao, from which chocolate is made, are cultivated.

The population amounts to about 1,300,000, including descendants of Spaniards, native Indians, and Mestizos. The government is a republic, and the established religion Roman Catholic, but the country is in a very unsettled state. Both agriculture and manufactures are much neglected, and good roads are few. The exports are chiefly cocoa, india-rubber, and Peruvian bark. The chief towns are Quito and Guayaquil.

Quito, the capital, stands at an elevation of 9500 ft., and is surrounded by snow-clad summits. The soil is fertile, and the climate a perpetual spring, but the neighbourhood is exposed to severe earthquakes. On this account most of the houses are only one storey in height, but there are several fine churches and a university. The population is about 80,000. **Guayaquil**, the chief port, has an excellent harbour, but the situation is unhealthy, owing to excessive heats and heavy rains.

COLOMBIA, OR NEW GRANADA.

THE *United States of Colombia* formerly included Ecuador and Venezuela, but the term is now restricted to New Granada. The country occupies the north-western portion of the continent and a part of the Isthmus of Panama, and the total area is 320,750 square miles. The western half of the state is covered by the three ranges of the Andes, but the eastern part is open, and embraces a portion of the llaños.

The three ranges of the Andes are known as the Western, Central, and Eastern Cordilleras respectively. The Western Cordillera is the least in elevation, but it rises so abruptly from the shores of the Pacific that it is very difficult of access, and goods are carried across the mountains on the backs of porters. The Central chain is the highest of the three: its average elevation is 12,000 ft., and the summit of **Tolima** reaches the height of 18,315 ft. Notwithstanding its altitude two good roads lead across it: one from Cartago, in the valley of the Cauca, to Santa Fé de Bogota; and the other from Popayan to the upper part of the valley of the Magdalena. The Eastern Cordillera consists of a series of table-lands possessing a cool and healthy climate, and is the most densely populated part of the country. The road which crosses this chain from Bogota passes through a ravine which is spanned by two natural bridges formed by fallen rocks jammed together. The lower bridge is 250 ft., and the higher 300 ft., above a foaming torrent.

The climate of Colombia varies with the altitude. In the valleys it is strictly tropical, while the high summits of the cordilleras are crowned with snow. The forests are extensive, and among the trees are mahogany, cedar, fustic, and other dye-woods. The country is also rich in minerals. The agricultural products include tobacco, coffee, cocoa, plantains, indigo, wheat and other grains; but agriculture is much neglected. The manufactures are not of much importance, and chiefly consist of woollen and cotton goods for home use. A railway crosses the Isthmus of Panama, but good roads are few. The population is about 3,000,000, of whom more than one-half are whites of Spanish descent and half-castes, the remainder native Indians.

Colombia was a dependency of Spain until 1811, when it threw off the Spanish yoke. The war of independence lasted some years, but it gained its liberty in 1819, and united with Ecuador and Venezuela to form a federal republic. This union, however, only lasted until 1831. The present form of government is modelled upon that of the United States. The government, however, is still very unsettled, and this has hindered the resources of the country from being developed.

TOWNS.—The chief towns are Bogota, Popayan, Tunja, Pamplona, Santa Marta, Cartagena, Colon, and Panama.

Santa Fe de Bogota, the capital of the Confederation, stands on the Bogota, a feeder of the Magdalena, at an elevation of 8600 ft. The climate is delightful, the scenery picturesque, and the population about 40,000. In the neighbourhood is the fine cataract of *Tequendama*, formed by the Bogota, which is precipitated at two bounds over a precipice 900 ft. in height. **Popayan**, the second city in point of population, is a large and handsome town near the source of the Cauca. **Tunja**, to the north of the capital, is a flourishing town. The state of Boyaca, in which Tunja stands, takes its name from the bridge of *Boyaca*, in this neighbourhood, where General Bolivar defeated the Spaniards in 1819. **Cartagena**, the principal seaport of the Confederation, is built on a sandy island in a fine bay to the south-west of the mouth of the Magdalena. Its chief exports are the precious metals. **Colon**, called by the Americans **Aspinwall**, is the eastern termination of the railway which crosses the isthmus. The belt of territory through which the line passes was, in 1873, declared by the state of Panama to be neutral ground. To the north-east of Aspinwall is *Portobello*, once a place of considerable trade, but now of no importance. It has a good harbour, but the situation is unhealthy. **Panama**, the western termination of the railway, has a good harbour and an increasing trade; the population is about 18,000.

VENEZUELA.

THE republic of Venezuela stretches from the shores of the Caribbean Sea to the Parimé Mountains, and comprises an area of 403,276 square miles. The greater portion of the country is occupied by the *llanos*, but the north-western part is crossed by a branch of the Andes, and the *Nevada de Merida* exceeds 15,000 ft. in height. The cordillera, after running north-east to the sea, follows the coast eastward to the Gulf of Paria. On the south, also, the country is diversified by offshoots from the Parimé Mountains. Almost the whole country lies in the basin of the Orinoco, but in the extreme north-west is a tract watered by streams which flow into Lake Maracaybo.

The *Lake of Maracaybo*, which, in shape, has been said to resemble a decanter, communicates with the sea by a channel 20 miles in length and from five to ten miles wide; its area is 7800 square miles. The lake is deep and easily navigated, and serves for the conveyance to Maracaybo of the produce of the interior. The water is fresh and sweet, and abounds with fish and water-fowl. The shores, however, are not considered healthy, and the Indians have built their huts or villages on posts of iron-wood driven into the water. It was from these Indian villages that the whole country derived its name: the Spaniards calling the district Venezuela, or "Little Venice."

The climate is strictly tropical. On the north, west, and south the country is covered with forests containing mahogany, iron-wood, ebony, Brazil-wood, nicaraguay and other dye-woods. The *cow-tree*, found in the mountains on the coast, yields an abundance of nutritious milk. The *llanos* are covered with grass, intermixed with lilies and other bulbous flowering plants, with occasional palms and mimosas. They swarm with wild horses, and among other wild animals found in Venezuela may be mentioned the jaguar, tapir, and monkeys of various kinds. The *lamantin*, or manati, is found in the Orinoco and its affluents, where it browses in herds on the herbage at the bottom of the streams. Huge boas and alligators frequent the river banks, and the *electric eel* inhabits the stagnant pools of the llanos. Vultures, parrots, flamingoes, and pelicans are met with, and there is an abundance of wild-fowl.

The population of Venezuela is about 1,800,000, the bulk of whom are mulattoes or zambos, the whites only forming about one per cent. of the total number. The government, like that of Colombia, is a federal republic, and it contains 21 states. Every branch of industry is more or less neglected, but the natural fertility of the soil furnishes several articles of valuable produce. The chief exports are coffee, cocoa, cotton, sugar, tobacco, indigo, Peruvian bark, hides, tallow, dye-woods, and other timber. The plantain and the mandioca, from which cassava and tapioca are obtained, are largely consumed by the natives.

TOWNS.—The chief towns are Caracas, Cumana, Valencia, Maracaybo, Merida, and Angostura.

Caracas, the capital of Venezuela, stands a few miles from the northern coast, at an elevation of 3000 ft. above the sea. The climate is healthy, but earthquakes are common. In 1812 nearly the whole town was destroyed by an earthquake and 10,000 persons perished. The present population is about 50,000. Caracas was the birthplace of General Bolivar (1783-1830). *La Guayra*, the port of Caracas, has a bad harbour and an unhealthy situation, but is the chief place of export. **Cumana** has a fine harbour, but the trade is less important than formerly. It is one of the oldest cities in America, having been founded in 1523. **Valencia**, the largest inland town, stands on the western shore of a fine lake. *Puerto Cabello*, its port, is said to have the finest harbour on the Caribbean coast. **Maracaybo**, on the western side of the channel leading from the lake to the sea, has considerable trade with the interior, but a shifting sand-bar at the mouth of the channel prevents vessels of large size from reaching it. **Merida** was once the largest town in Venezuela, but it was destroyed by an earthquake in 1812. It is a flourishing town, and has a fine cathedral. **Angostura**, on the Orinoco, about 240 miles from its mouth, exports cotton, cattle, and other agricultural produce.

GUIANA.

Guiana extends from the mouth of the Orinoco to Cape Orange, and from the coast to the Sierra Acarai. The district along the sea-coast is level, but the country rises by a series of terraces towards the interior. The rivers generally flow at right angles to the mountains. The climate is tropical, and the soil fertile. The forests abound with ornamental woods, dye-woods, and medicinal plants. The wild animals include the jaguar, puma, peccari, and tapir, as well as the manaté or sea-cow, and the alligator. Turtles are plentiful, and the rivers teem with fish. The birds have all brilliant plumage. The country is divided between the British, Dutch, and French.

British Guiana.

British Guiana lies on the north-east coast of South America, and within eight degrees of the equator. The coast extends from the mouth of the Orinoco to the mouth of the Corentyn, a distance of 280 miles; and the country extends inland for about 400 miles; the total area being 76,000 square miles. The district along the sea-coast is a level plain covered with sluices and enbankments; but the country rises in the interior by a succession of terraces, separated by mountain ranges which run in an eastern and western direction. On the southern boundary line is the **Sierra Acarai**, and nearly in the centre of the colony is the **Sierra Pacaraima.** The rivers flow at right angles to the mountain chains, and, in bursting through the various ranges, form numerous and lofty waterfalls. The principal stream is the **Essequibo**, about 600 miles in length; and between it and the Corentyn are the **Demerara** and **Berbice**, which are 360 and 200 miles in length respectively. The climate is strictly tropical; there are two rainy seasons, one from December to February, and the other from June to August. One-half of the country is covered with forest, and timber forms an important article of export. All the animals of tropical America are met with—jaguars, pumas, tapirs, sloths; parrots, humming-birds, and flamingoes. Reptiles and insects are numerous, and the streams abound with alligators.

The population in 1871 amounted to 193,491, of whom about 113,500 were native Indians, and 50,000 Coolies brought from India and China. Only about 1500 are Europeans. The cultivated part of the country is confined to the sea-coast, and to a short distance from the banks of the rivers. Cotton and coffee are not cultivated to so great an extent as formerly, and *sugar* is now the staple product of the colony. There are but two towns properly so called: **George Town**, the capital, at the mouth of the Demerara, and **New Amsterdam** at the mouth of the Berbice; the former has a population of 25,000. The colony formerly belonged to the Dutch, and the form of government is still essentially the same as under Dutch rule. There is a governor and Court of Policy, and also a combined court for the purpose of levying taxes.

Dutch Guiana lies between the rivers Corentyn and Maroni, and has an area of 38,500 square miles. The population is about 60,000, the majority of whom are negroes. **Surinam**, the principal river, is about 300 miles in length, and at its mouth stands *Paramaribo*, the capital, with a population of 20,000. The chief exports from the colony are sugar and coffee.

French Guiana extends from the mouth of the Maroni to that of the Oyapok, and has an area of 27,500 square miles. The population is only about 22,000, three-fourths of whom are negroes. The chief products of the colony are sugar, with pepper, cloves, nutmegs, and cinnamon. *Cayenne*, the capital, stands on an island adjacent to the coast. It is a wretched place, and has a population of about 8000.

BRAZIL.

Boundaries and Extent.—Brazil is bounded on the north by Guiana, Venezuela, and New Granada; on the west by Ecuador, Peru, and Bolivia; on the south by Paraguay and Uruguay; and on the east by the Atlantic. Its extreme length, from north to south, is 2600 miles; its greatest breadth, from east to west, is nearly as much: it comprises an area of 3,288,000 square miles, and its length of coast-line is 3700 miles.

Surface and Minerals.—The greater portion of the interior is a plateau, triangular in shape, with the apex touching the Madeira about 10° south, and the base formed by the *Sierra Espinhaço* and *Sierra do Mar*. The highest portion of the plateau is about 2500 ft., and it is crossed by parallel hill ranges, which increase in elevation as they approach the Atlantic. The high land of the interior descends by gentle terraces to the low plains of the Amazon, and hence the southern feeders of that river form numerous cascades. The line of watershed between the Madeira and the La Plata runs from the neighbourhood of Cape Frio to the apex of the plateau, and is known in some parts as the *Sierra de Vertentes*. The country is exceedingly rich in minerals, including diamonds, gold, silver, iron, copper, platinum, and salt.

Brazil produces most of the diamonds of commerce. They are found chiefly in the province of Minas Geraes, in the upper part of the basin of the San Francisco, and in the province of Matto Grosso. The district of *Diamantina*, in Minas Geraes, is an almost inaccessible region, and was formerly strictly guarded. The mines are worked by negroes under the strictest surveillance, and when a slave is fortunate enough to find a diamond weighing 17 carats he obtains his liberty. Gold is met with in the same provinces as diamonds. Both iron and coal have been met with in the province of Rio Grande do Sol. Rock-salt is not found on the table-land of Brazil, but a great number of small patches occur on the surface covered with a salt efflorescence, which the cattle lick up. These *salt-licks* are seldom more than a few yards in extent; but wherever they are found they double the value of the estate. There are also two extensive salt steppes—one in the valley of the San Francisco, between the parallels of 7° and 10° south; and the other in the province of Matto Grosso, near the western boundary of the empire.

CLIMATE AND PRODUCTIONS.—In the low plains along the coast from Rio Janeiro to the mouth of the Amazon, and in the whole valley of that river the climate is very hot, but in the interior the heat is tempered by the elevation, and in the south by the latitude; in the southern provinces winter is sometimes severe. The northern part of Brazil is occupied by the *selvas*, and here are extensive forests producing beautiful varieties of wood useful for dyeing, cabinet-work, and shipbuilding. Among these are palms of various kinds, mahogany, logwood, Brazil-wood, rosewood, and the india-rubber trees. The high lands of the interior produce the fruits and grains of Europe, while sugar, coffee, cotton, and maize grow freely on the coast.

One of the most remarkable products of Brazil is the **carnauba palm**, which grows without culture, and will flourish in the most prolonged drought. The top, when young, is an appreciable and nutritious article of food; and from this tree also wine, vinegar, and a saccharine matter are extracted, as well as a kind of gum similar in its taste and properties to sago. From the wood musical instruments are made, as also tubes and pumps for water. The delicate fibrous substances of the pith of the stalk and its leaves make a good substitute for cork. The roots have the same virtues as the sarsaparilla. The pulp of the fruit is of an agreeable taste, and the nut, oily and emulsive, is roasted, and then used as coffee by many persons. From the trunk are obtained strong fibres, and also a species of flour similar to maizena, and a liquid resembling that of the Bahia cocoa-nut. From the dried straw are made mats, hats, baskets, and brooms, and large quantities of the straw are exported to Europe for the manufacture of fine hats. Finally, from the leaves is produced the wax used in the manufacture of candles; and the export of this wax exceeds £162,000 a year in value.

Another singular feature in the vegetation of Brazil are the leafless parasites included under the general name of **timbo**. They serve for basket-work, and are beaten into tow, and their juice is used for tanning. These plants twist round trees, climb up them, cross from bough and tree to tree, till the whole woods are hung with their garlands. Some are as thick as a man's leg, and may easily be bent, but to break them is impossible. Sometimes this vegetable cordage is so closely interwoven that it has the appearance of a net, and neither birds nor beasts can get through it.

Among the wild animals may be mentioned the jaguar, tapir, puma, wild-boar, tiger-cat, ounce, armadillo, sloth, ant-eater, and porcupine; monkeys also are numerous. Among birds there are the ostrich, vulture, and eagle, as well as birds of beautiful plumage, such as parrots, toucans, and humming-birds. Water-fowl are numerous in the valley of the Amazon, and in the lakes and lagoons of the south. Insects are remarkable for their beauty and size, especially butterflies, ants, and mosquitoes. The common bee of Europe is not found in Brazil, neither is the silk-worm.

The **tapir**, the largest of the native animals, resembles a hog in shape, but feeds like a horse. It is harmless and timid, and amphibious in its habits. Its flesh is said to resemble that of an ox. The monkeys embrace a large number of species, and among them the pretty **marmosets**, which are only about seven or eight inches in length. The ostrich, or more properly, the **rhea**, is found in numerous flocks on the table-land, and is caught for the sake of its eggs and flesh, as well as for its feathers. The **manaté**, or sea-cow, is found in the Amazon and Orinoco. It yields a valuable oil, and its flesh is said to resemble pork. Sausages are made of it, and sent to Portugal as a delicacy. It is a very peaceable animal, and is rapidly decreasing in numbers, as the alligator is a terrible enemy to it.

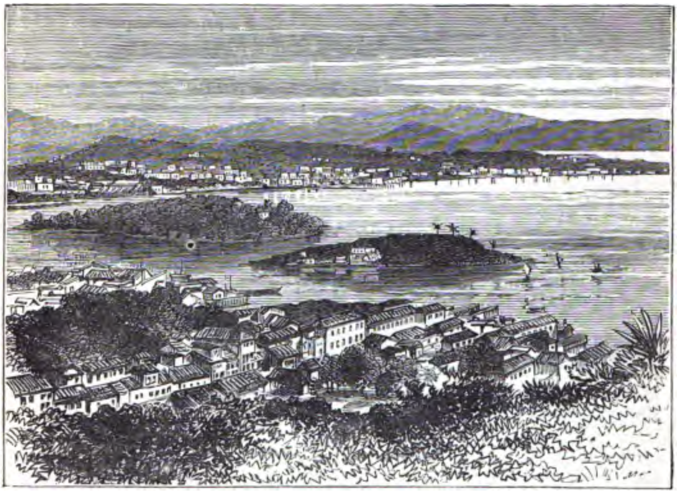
PEOPLE.—The population of Brazil is about 10,200,000, of whom about 1,500,000 are negroes, 500,000 native Indians, and the remainder descendants of the Portuguese, or mixed races. Formerly about half the population were slaves, but in 1871 a law was passed for the gradual abolition of slavery. The government is an empire—the only monarchical form of government in America—and the national religion, Roman Catholic; but all other forms of Christianity are tolerated.

Brazil was first discovered by Pinçon, a companion of Columbus, in the year 1500. He is said to have touched at Cape St. Augustin, and to have traced the coast as far as the mouth of the Orinoco. The Spaniards, therefore, claimed the country, but appear to have made no settlement. A few months later Cabral, a Portuguese, on his way to India, was driven by the winds in sight of the shore, near Porto Seguro. He therefore landed and, erecting a cross, took possession of it in name of his sovereign. For many years the right of possession was disputed by Spain and Portugal, and, in the early part of the seventeenth century, the Dutch made some attempts upon it. In 1640, however, the Dutch were expelled, and from that time Brazil remained a Portuguese possession. In 1808, owing to the progress of the French in the Spanish peninsula, the Regent of Portugal fled to Brazil with the royal insignia, and subsequently it was made an integral part of the Portuguese crown. In 1822, however, the country asserted its independence, and the Crown Prince, in whose charge it had been left, assumed the title of Emperor. Since then the country has made steady progress in developing its resources, and it is said that its commerce doubles every ten years.

INDUSTRY.—The chief employment is agriculture, and the staple products are sugar, coffee, and cotton; tobacco, rice, manioc, maize, and various fruits and drugs are also produced. Cattle and horses abound in the interior.

Sugar is principally raised in the province of Bahia; coffee and tobacco in the neighbourhood of Rio. Manioc, or cassava, is the chief food plant. In its natural state the root of this plant is dangerous, the juice being a deadly poison, in which the Indians were accustomed to dip their arrows; but when properly prepared it yields a nutritious flour, from which tapioca and cassava bread are made. There is also another species called the sweet manioc, which is boiled and eaten in the same manner as the potato.

There are few manufactures of any importance, but the commerce is considerable, and is carried on with England chiefly. The principal exports are coffee, cotton, sugar, hides, tallow, beef, dye-woods, gums, diamonds, and gold. The Amazon, with its tributaries, affords a splendid means of communication between one part of the empire and another; and there are above 1000 miles of railway open.



RIO DE JANEIRO.

TOWNS.—The chief towns are Rio, Bahia, Pernambuco, Maranhao, Para, San Paulo, Villa Rica, and Tejuco.

Rio de Janeiro stands on the western side of a magnificent harbour which is surrounded by splendid scenery. The city, which is situated on level ground at the foot of the hills, has a fine appearance from the bay; but though the streets are mostly straight, and intersect each other at right angles, they are for the most part narrow and dirty. There are numerous churches and conventual establishments, but few have any architectural pretensions. The entrance to the harbour is marked by a singular hill 900 ft. in height, in the form of a sugar-loaf, close to the western shore. The commerce of Rio is very extensive, the chief export being coffee. The population is about 275,000.

Bahia, or *San Salvador*, was founded about 1549, and until 1763 was the capital of the colony. It is built partly on the ridge and partly on the declivity of a steep hill, and consists of an upper and a lower town. The upper town contains some fine streets, and is the residence of the principal families; but in the lower town the streets are narrow and dirty. The harbour, called *All Saints' Bay*, is one of the finest that can anywhere be met with, and the trade is very extensive. The chief exports are sugar, coffee, and cotton. The population is about 150,000.

Pernambuco, the third city in Brazil, consists of four separate towns: Olinda, Recife, Boa Vista, and San Antonio. *Olinda* is beautifully situated among picturesque hills, and contains some fine buildings and numerous villas; but it is in a state of decay, many of its inhabitants having removed to the adjacent towns. *Recife* (the reef), so called on account of a coral reef which forms a natural breakwater along this part of the coast, is built on a low sandbank, but is connected to San Antonio by a bridge: it is the chief place of business. *San Antonio* and Boa Vista are also built on islands. San Antonio, the residence of the governor, has a gay and lively appearance. It is joined to the mainland by a long embankment. *Boa Vista* contains the residences of many of the richer inhabitants, and is surrounded with gardens. The chief export from Pernambuco is sugar. The total population of the four towns is about 120,000.

Maranhao, on an island at the mouth of the river Maranhao, was founded by the French in the early part of the 17th century. The harbour is difficult of access and not very deep, and it is probable that the trade will eventually be transferred to *Alcantara*, on the opposite side of the bay. The population is about 30,000.

Para, on the south side of the Rio Para, stands in a fertile plain, and is one of the finest cities in Brazil. Its streets are straight, its houses solid and elegant, and some of its public buildings are handsome structures. The harbour is bad and the climate hot, but owing to its situation the town has considerable trade. The chief exports are cocoa and caoutchouc, or india-rubber. The population is about 25,000.

San Paulo, to the south-west of Rio, stands about 30 miles from the port of *Santos*, with which it is connected by rail. It has considerable trade in coffee and sugar. **Villa Rica**, or *Ouro-Preto*, stands in a mountainous country at an elevation of 3700 ft. It is the centre of a rich gold-mining district. **Tejuco**, or *Diamantina*, about 200 miles to the north, is the centre of the diamond district. There is another Diamantina, in the interior, in the province of Matto Grosso.

PERU.

PERU is bounded on the east by Bolivia and Brazil, on the north by Ecuador, and on the west by the Pacific. It extends from north to south for a distance of more than 1600 miles, and its area is estimated at 503,380 square miles. The coast is throughout rugged and lofty. In the north loose sandy tracts occasionally intervene between the cliffs and the sea, but in general the water washes a rocky shore, and throughout the whole distance of 1600 miles there is not a dozen secure harbours.

The operation of landing is, except in a few places, difficult and dangerous owing to the powerful swell of the Pacific, which occasions a heavy surf. The landing is often effected by means of *balsas*. The balsa is made of inflated seal-skins placed side by side, and connected by cross pieces of wood and strong lashings of thong. Over this a framework of cane mats forms a sort of platform about four feet in width by six or eight feet in length. The goods or passengers are placed on the platform, and the balsa is guided by a person, with a double-bladed paddle, who kneels down at one end and strikes alternately on each side.

The surface of Peru may be divided into three regions: the coast, the mountains, and the eastern plains. The coast region consists of a sandy slope, furrowed by valleys which are dry nine months in the year. The uplands separating these valleys are covered with a fine sand which can only be crossed with guides, and in the night time. In the south the vales are narrow and far apart, further north they are wider and more frequent. In this region it never rains, but there are copious dews, and from June to November, in the central and southern provinces, a thick mist called the *garua* prevails. In the north rains occasionally occur, and when this is the case the arid sands are speedily clothed with exuberant vegetation. Narrow and difficult passes connect the coast region with the mountains, which include the Peruvian Andes and a portion of the Bolivian Andes.

The **Peruvian Andes** extend from the "Knot" of Loxa to that of Cusco, or from 5° to 15° south latitude. They may be divided into four parts: first, the three ridges which bound the valleys of the Maranon and Huallaga; next, the Plateau of Pasco; then the valley of the Jauja; and lastly, the Plateau of Cusco. The valley of the Maranon is very steep. The stream has its source at an elevation of 12,000 or 14,000 ft.; but in its course northwards it descends by a series of rapids until it reaches an elevation of 3000 ft. only. Here the climate is hot and the vegetation strictly tropical. The valley of the Huallaga also rises steeply towards the south. The western of the three chains, which here form the Andes, is bare of trees; the central ridge is only sparsely timbered; but the eastern chain is thickly clothed with forests, in which the cinchona abounds. The *Plateau of Pasco* is the most elevated part of the Andes. Its average height is about 14,000 ft., and it is only inhabited by persons engaged in the rich silver mines. The surface yields a scanty pasture, which supports sheep and llamas. Southward the country dips down into the valley of the Jauja, one of the most fertile and populous districts in Peru. The land then again rises rapidly, and Cusco stands at an elevation of 11,380 ft. The **Bolivian Andes** extend from the "Knot" of Cusco to that of Lipez, about 22° south, and consist of a double chain which enclose the Plateau of Titicaca and the valley of the Desaguardero. The coast chain, which is in Peruvian territory, is volcanic, and contains the active cone of **Arequipa**, 18,373 ft. in height; and the summit of **Chuquibamba**, which rises 3000 ft. higher.

The mountain region of Peru occupies about one-half the total area of the country. The third division contains the plains which cover the eastern portion of the country, and occupy about one-third of the entire surface. These plains are covered with thick woods and grassy savannahs.

The minerals include gold, silver, copper, lead, and quicksilver. Nitrate of soda also is collected along the coast to the south of Arequipa, and exported in considerable quantities.

There are silver mines along the whole range of the Andes from Caxamarca to the desert of Atacama. The most productive at present are those of Pasco. The mines of Potosi, at an elevation of 16,000 ft., are exceedingly rich, but it is difficult to work them owing to their situation. The mines of Huancavelica were formerly celebrated for their produce of quicksilver, but they are now almost abandoned.

The climate of Peru varies with the elevation, from the heat of the tropics to the cold of the frigid zone, and from the rainless district on the coast to the well-watered region on the eastern slope of the Andes. There is, therefore, a great diversity in the vegetation. The low valleys produce sugar, rice, maize, and cotton; the forest region, the cinchona bark, gums, balsams, vanilla, sarsaparilla, and caoutchouc, as well as ebony, Brazil-wood, logwood, and mahogany. Among wild animals may be mentioned the puma, jaguar, tapir, monkeys, sloths, armadilloes, and anteaters. The manati is met with in the Ucayali and in the lower part of the Huallaga, and the condor is seen soaring above the tops of the loftiest mountains. Horses and mules are the chief beasts of burden in the valleys; sheep, llamas, and alpacas in the mountain districts.

PEOPLE.—The population is estimated at nearly 4,000,000, above one-half of whom are Indians. The state religion is Roman Catholic, and the government a republic.

When the Spaniards arrived in Peru, in 1532, they found the country under the dominion of the Incas, who, according to the tradition of the Indians, had held the sovereignty about four centuries. Cuzco was then the capital, and it contained a magnificent temple dedicated to the worship of the sun. The country had attained to a considerable state of civilization, as is attested by the remains of roads, aqueducts, palaces, and temples, which still overspread the country. One fine road, 1500 miles in length, connected Cuzco with Quito, and the empire of the Incas extended from Ecuador to Chili They fell, however, an easy prey to Pizarro and his companions, and Peru remained in possession of the Spaniards until 1821, when it asserted its independence. The country is still, however, in a very unsettled state.

INDUSTRY.—Agriculture is much neglected, though in some of the valleys the soil is extremely fertile. Sheep thrive well on the plateaus, and wool is an important article of export. The manufactures are in a backward state, though some of the native tribes make *ponchos* or loose cloaks of great beauty and fineness of texture. Peru is also celebrated for its silver filagree work. The chief wealth of the country, however, consists in its mines of silver, copper, and quicksilver. The commerce is considerable, the chief exports being guano (from the Chincha Islands), nitrate of soda, sheep and alpaca wool, sugar, silver, and cinchona bark. The principal imports are manufactured goods and machinery.

The roads constructed by the Spaniards are little better than mule tracks; and narrow, steep, and difficult passes connect the coast with the interior. One road leads from Truxillo to Caxamarca. Pasco is reached from the west by the *Viuda Pass*, which has an elevation of 15,600 ft. The road from Lima to Huancavelica, and that from Arequipa to the valley of the Apurimac, are almost of equal altitude. A system of railroads has, however, been begun by the Peruvian government which, when completed, will materially facilitate intercommunication, and thus help in developing the resources of the country. Several of the coast towns are already connected by rail, and a line is projected from Arequipa to Puno, and thence to Cuzco.

TOWNS.—The chief towns are Lima, Cuzco, Arequipa, Arica, Tacna, Iquique, Truxillo, Caxamarca, Pasco, and Puno.

Lima, the capital, stands on the Rimac, in a delightful valley about six miles from the sea. It was founded by Pizarro in 1535, and its cathedral contains his tomb. The city is well built, but owing to the frequency of earthquakes the houses are rarely more than one storey in height. The climate is delightful, the extremes of heat and cold being unknown, and the surrounding country is fertile. The population is about 150,000. *Callao*, its port, is connected to it by rail. Its harbour is considered the safest on the whole Pacific coast of South America.

Cuzco, the second city in the country, stands at an elevation of 11,380 ft. The city contains some fine buildings, especially the cathedral and convent of St. Augustine, which are said to rank amidst the finest religious edifices in the New World. There are also interesting remains of the architecture of the Incas. Upon a hill to the north of the city are the ruins of a very extensive fortress, and some of the stones are said to exceed 150 tons in weight. The inhabitants of Cuzco excel in embroidery, painting, and sculpture; and there are manufactures of cotton, linen, woollen, and leather. The population is about 80,000.

Arequipa, on the western declivity of the Andes, at an elevation of 7700 ft., and at a distance of about 30 miles from the sea, is one of the best built cities in Peru. It has frequently suffered, however, from earthquakes, the most recent of which was in 1868, when Tacna, Arica, and Iquique also suffered. The port of Arequipa is *Islay*. **Arica** is the chief port in Southern Peru, and exports copper-ore, wool, and silver. It is connected by railway with **Tacna**, where most of the foreign merchants reside. **Iquique** is the chief place of export for the nitrate of soda found in Southern Peru. It suffered severely from an earthquake in 1877.

Truxillo is a considerable port in Northern Peru. **Caxamarca** stands in a fertile and well cultivated valley at an elevation of 9000 ft. The inhabitants are skilful in the manufacture of sword-blades, daggers, bridle-bits, and other articles of silver and iron. It was at Caxamarca that Atahualpa, the last of the Incas, was imprisoned and murdered. **Pasco** stands at an elevation of 14,000 ft., and is perhaps the most elevated town in the world. It is a wretched place, chiefly inhabited by miners. The population varies from 4000 to 12,000, according to the season. There are said to be several hundred silver mines in the neighbourhood, but only about thirty are worked, and these only for eight months in the year. **Puno**, on the western shore of Lake Titicaca, is a place of considerable trade: the lake is now navigated by steamboats.

BOLIVIA.

Bolivia is bounded on the north and east by Brazil, on the west by Peru and the Pacific, and on the south by Chili and States of La Plata. The total area is 500,870 square miles, but the length of coast-line is only about 100 miles.

The coast district is a barren tract of sand forming part of the *Desert of Atacama*, and the only road which leads from the coast to the interior crosses a pass 14,700 ft. in elevation; hence the produce of Bolivia finds its chief outlet in the southern ports of Peru. Cobija, the Bolivian port, is an insignificant place. To the south is the Bay of Mexillones, where there are some large guano deposits which are worked in conjunction with Chili.

Surface and Minerals.—The country presents great diversities of surface, elevation, and climate. In the west it is traversed by lofty mountains, in the east there are broad and fertile plains. The Western Cordillera, in the Bolivian Andes, belongs to Peru; but the eastern chain is almost entirely in Bolivia, and is one of the most magnificent mountain ranges in the world. From Cuzco a continuous range of snowy peaks runs south to **Illimani**, which reaches an elevation of 21,000 ft., while **Sorata**, a little further north, is 200 ft. higher. The Western Cordillera is volcanic, and the summits generally appear in the form of a truncated cone, or of a dome; the Eastern Cordillera is not volcanic, but in many parts is highly metalliferous, and it contains a succession of sharp, rugged peaks and serrated ridges. Between the two chains lies the Valley of Desaguardero.

The *Valley of Desaguardero* has an elevation of about 13,000 ft., and the northern part is occupied by **Lake Titicaca**, which covers an area of 7000 square miles. The shores and islands are intimately connected with the history of the Incas. The Desaguardero issues from the southern extremity of the lake, and, flowing southwards, pours its waters into Lake Uroo, which is said to have no outlet. To the south of Lake Uroo there is a dreary region called *El Despoblado* (the uninhabited). It is elevated about 13,000 ft. above the sea, and the few inhabitants dispersed over its surface gain a subsistence by hunting vicuñas, guanacoes, and chinchillas; and by collecting gold and salt.

The mineral productions of Bolivia are very valuable. The silver mines of Potosi are believed to be inexhaustible; while gold is obtained in the eastern declivity of the Eastern Cordillera; copper, lead, tin, salt, and sulphur are also met with.

Climate and Productions.—On the coast the climate is hot and dry, and rain seldom or never falls; in the eastern plains the climate is also tropical, but rains are continuous from October to April. In the valley of Desaguardero snow falls in November and April, at the beginning and end of the summer season, but during winter the sky is serene and cloudless. Tremendous thunderstorms are frequent among the mountains, and earthquakes visit the coast. In the coast region there are some narrow strips of land along the banks of the rivers where maize, cotton, the sugar-cane, and various fruits are grown. The eastern plains are covered with mighty forests of the most valuable timber. The Valley of Desguardero is destitute of trees, but the ground, where not cultivated, is covered with a fine green turf. The rushes which grow round the margin of Lake Titicaca are put to a variety of uses. With them the natives build their huts and make boats and sails; they also weave them into mats, which serve as beds for the poor, and carpets in the houses of the rich. The tapir, jaguar, and various kinds of monkeys, as well as parrots and other birds of beautiful plumage dwell in the eastern forests; the llama, alpaca, guanaco, vicuña, and chinchilla inhabit the high table-lands; while the condor soars above the highest peaks.

People and Industry.—The inhabitants, like those of Peru, are a mixed race of Indians and white people, chiefly of Spanish descent. The Inca Indians of the Desaguardero valley and on the coast, who speak the Quichua language, have attained a certain degree of civilization, and follow agricultural pursuits. Those of the eastern plains, on the contrary, are many of them fierce and warlike, and go almost naked. Some of these savage tribes, however, manufacture beautiful cloths, while others display a remarkable knowledge of the medicinal properties of plants. The total population is about 2,000,000; the government is a republic; and the established religion Roman Catholic.

Bolivia, under the name of Upper Peru, was formerly included in the Spanish vice-royalty of Buenos Ayres; but the battle of Ayacucho in 1824 secured the independence of the country, and in the following year it received its present name in honour of General Bolivar. The political history of the country, however, records but a series of revolutions: not one of its presidents has been able to complete his tenure of office, and many of them have been murdered.

The chief branches of industry are mining, agriculture, and commerce. The chief agricultural products are rice, barley, oats, maize, cotton, cocoa, indigo, potatoes, fruits of all kinds, and medicinal herbs. The manufactures are confined to the making of a few cotton and woollen fabrics, and, in the mining districts, articles of silver wire. The commerce is inconsiderable, and is carried on chiefly through the Peruvian towns of Arica and Tacna. Its natural outlet, however, is the river Madeira, which drains the fertile eastern plains.

The only road which connects the coast with the interior reaches the valley of the Desaguardero by a pass 14,700 ft. in elevation, and is only practicable for mules and llamas. In order to proceed from La Paz to the more populous districts beyond the Eastern Cordillera the pass of Pacuani must be traversed, and it rises to 15,000 ft. The road from Oruro to Chuquisaca crosses the chain by the pass of Challa at an almost equal elevation.

Towns.—The chief towns are Chuquisaca, La Paz, Cochabamba, Potosi, and Cobija.

Chuquisaca, or *Sucre*, the capital of Bolivia, stands on the line of watershed between the Amazon and the La Plata at an elevation of 9000 ft. The climate is pleasant, but rains are heavy, and in winter violent storms are frequent. The city contains a handsome cathedral and also a university, hall of congress, and mining school. The population is about 40,000. The town was built by one of Pizarro's officers on the site of an old Peruvian town called *Choque Chaka*, or "Bridge of Gold," the treasures of the Incas having passed through it on their way to Cuzco.

La Paz, the largest city in Bolivia, stands a short distance from the south-eastern shore of Lake Titicaca, and not far from the source of the Beni. It is the centre of considerable trade, and has a population of 77,000. **Cochabamba**, between La Paz and the capital, stands in a rich agricultural district, and has some manufactures of cottons and glass. The population is about 40,000.

Potosi stands on the northern declivity of the *Cerro di Potosi*, at an elevation of 13,000 ft. Early in the seventeenth century it is said to have had a population of 150,000, but at present it has not more than 20,000. The Cerro di Potosi rises to a height of 16,000 ft., is a perfect cone, though not volcanic, and does not produce a blade of grass. Viewed from the city it appears dyed all over with numerous metallic tints—green, orange, yellow, grey, and rose colour. The whole mountain seems to be a mass of silver ore of different degrees of richness. The silver was discovered by an Indian in 1545 who, being in pursuit of a llama upon the steep declivity, in order to save himself from falling caught hold of a shrub, which being torn from the soil disclosed a mass of silver at its roots. From that time until 1803 the mines are said to have produced above £200,000,000 worth of silver, and the mountain is now perforated with workings. Owing, however, either to defective working or to want of capital, the mines are not now very productive.

CHILI.

THE state of Chili is a long narrow strip of country extending from the southern tropic to Cape Horn, and from the crest of the Andes to the Pacific Ocean. Its extreme length is about 2200 miles, but its average breadth is only about 100 miles, and the total area has been estimated at 126,000 square miles.

SURFACE AND MINERALS.—Throughout the whole of this district the Andes forms a single chain, with a general elevation of 13,000 or 14,000 ft. above the sea-level; but numerous summits rise much higher than this average, and in lat 32° 39′ the **Nevada of Aconcagua** reaches 23,910 ft., and is the highest summit in the New World. Further south, however, the chain rapidly diminishes in elevation.

From the neighbourhood of Santiago to the island of Chiloe a chain of hills borders the coast, and between this and the Andes is a well-watered valley which has been called the "Garden of Chili." South of Chiloe the coast bears a striking resemblance to that of Norway. It is guarded by a chain of rocky islands, and is deeply indented with fiords which run far up into the heart of the mountains, ending often in tremendous glaciers. The mountain slopes as well as the islands are here thickly clothed with pines and araucarias. Still further south, in the Archipelago of Tierra del Fuego, the sides of the mountains are covered with forests of dark beech which never change their dusky hue. The mountains here attain, in Mount Darwin, an elevation of 6800 ft., and glaciers descend from its southern slope.

Chili is extremely rich in minerals. There are gold, silver, *copper*, and coal mines; and iron of the best quality is met with. Lead is found mixed with the silver, and the copper almost always contains a certain proportion of gold. The mountains also contain precious stones, such as the agate, jasper, and rock-crystal. The silver mines are found in the highest parts of the Andes.

CLIMATE AND PRODUCTIONS.—The climate of course varies with the latitude and elevation. The northern part, which is included in the *Desert of Atacama*, is dry and hot, but the country becomes more fertile as we advance south, and is watered by abundant showers. The interior of the country, as a rule, is hotter than the coast, as it is not cooled by the sea-breezes. The northern provinces are very subject to earthquakes. In 1819 the town of Copiapo was totally destroyed; and in 1835 Conception and other towns suffered severely. Vegetation increases in abundance as we proceed from north to south, and hence most of the vegetable forms are either of sub-tropical or temperate types. Laurels, myrtles, cypresses, and other evergreens grow to such a size as to produce valuable timber. The plants and flowers are also said to be rich, various, and beautiful.

The **algaroba** grows almost in every part of the country. It is a kind of acacia, and produces a bean of which the Indians make bread and also a strong fermented liquor. The **araucaria**, which clothes the mountains of the southern provinces, is a handsome pine with cones the size of a child's head; and it supplies the natives with a great part of their food. The **potato** is indigenous to Chili. In its wild state the root is small and bitter, and is seldom found more than 400 ft. above the sea-level. It was cultivated in America at the time of its discovery, and is now found on the Andes at the height of 10,000 or 12,000 ft.

The native animals include the puma, jaguar, llama, and numerous monkeys. The chinchilla, so valued for its fur, is found in the desert country of the north; and the *skunk*, which, when pursued, emits an intolerable odour, is also a native of this country. The birds include the condor, pelican, vultures, and parrots. Chili enjoys a singular freedom from venomous reptiles or noxious insects.

PEOPLE AND INDUSTRY.—The total population of Chili is about 2,074,000, including 70,000 Araucanian Indians. These natives, who are confined to the country south of the

Biobio, are a bold and warlike race whom the Spaniards were never able to subdue, and who are still nominally independent. Chili was formerly a Spanish colony, but it asserted its independence in 1810, and since 1818 has been acknowledged an independent state. It is the most enterprising and prosperous of the South American republics. Agriculture is carried on with skill and success, and the implements of industry are of the newest kind. Maize, wheat, and other grains, as well as hemp and potatoes are grown; and immense herds of cattle are reared in the southern provinces. The produce of the well-cultivated fields supply almost the whole of the Pacific coast of South America with food, and some of it is even exported to Australia. Mining also, especially that of copper, is an important branch of industry; and copper-ore is sent in large quantities to Swansea, where it is smelted. The manufactures include earthen and copper wares, linens, cordage, and soap.

Considerable attention has been bestowed upon means of communication; good roads have been constructed, nearly 1000 miles of railroads have been laid down, and above 2000 miles of telegraph have been opened. The chief exports are metals, wheat, flour, hides, and tallow.

TOWNS.—The chief towns are Santiago, Valparaiso, Conception, Coquimbo, Copiapo, and Punta Arenas.

Santiago, the capital, is one of the finest cities of South America in regard to buildings, convenience, and healthiness. It is regularly laid out, being divided, like other Spanish towns in South America, into rectangular spaces of equal size. The principal streets are about forty-five feet wide, the houses are usually one storey in height, on account of earthquakes, but they are generally large, and each has its garden. A railway connects it with Valparaiso; and two good roads lead across the Andes to Mendoza and Buenos Ayres. The population is 180,000.

Valparaiso, situated on the coast, is the port of the capital, and central depôt of the trade of Chili. Large quantities of corn are shipped to Callao and other ports; and tallow, hides, copper, the precious metals, indigo, wool, and sarsaparilla are among the exports. The population is about 100,000. **Conception**, at the mouth of the Biobio, was once a place of some importance, but it was destroyed by an earthquake in 1835, and now consists only of a few rectangular streets of low brick-built houses.

Coquimbo, or *La Serena*, to the north of Valparaiso, is a clean town and well laid out, the houses being interspersed with numerous gardens of fruit trees and evergreens. It exports large quantities of mineral produce, especially copper, and is connected by rail with the mines in the interior. **Copiapo**, on a rivulet of the same name, has suffered severely at times from earthquakes. There are valuable mines of copper and silver in its vicinity, and large quantities of copper-ore are smelted in the neighbourhood. It is connected by rail with *Caldera* on the coast. **Punta Arenas**, on the Strait of Magellan, is a penal settlement and place of call for passing vessels. Coal has been found in the neighbourhood.

THE ARGENTINE REPUBLIC.

The Argentine Republic includes the fourteen provinces of the Rio de la Plata, together with a large extent of territory not yet organised. It extends from the crest of the Andes to the Atlantic, and from the borders of Bolivia to the Rio Negro. The total area is estimated at 838,600 square miles.

Surface and Minerals.—Five-sixths of the whole surface consists of vast level plains. North of the Rio Salado these plains are known as *El Gran Chaco*—the Desert—but in the north the plains are well watered, and produce large stretches of forest and grass land, inhabited by a number of independent tribes, mostly of Indian origin. Further south, however, between the parallels of 26° and 30°, there is a complete desert, where the soil is sandy and covered in many parts with saline incrustations. No part produces grass, but some tracts are covered with stunted prickly herbs. Westward, this desert extends almost to the foot of the Andes, with the exception of narrow tracts along the banks of the Rio Dolce, the water of which, being sweet, can be used for irrigation. South of the parallel of 30° the country improves. From Cordova eastward to the Parana the surface is hilly or undulating, and produces good crops of Indian corn; but west of Cordova there is a deficiency of rain, and the country is almost bare of grass. The *Pampas* proper extend from the parallel of 33° south to the banks of the Colorado. The mineral products include silver, coal, salt, alum, and sulphur, and gold mines of considerable value are worked by an Anglo-Argentine company.

Climate and Productions.—The climate is very various: among the *Despoblado Mountains* of the north-west it is extremely cold, while the adjacent plains of El Gran Chaco form, perhaps, the hottest part of America. Further south it is more temperate, and Buenos Ayres has an average annual temperature of about 60° Fahr. The Pampas are subject to periodical droughts, which occur at intervals of about fifteen years; for the three years, which ended in 1830, so little rain fell that vast numbers of birds, wild animals, and cattle perished for want of food and water. In the eastern parts of the Pampas, however, rain is generally abundant.

During the greater part of the year the winds are northerly, and the heat is often oppressive and relaxing. Then suddenly the *pampero*, a south-west wind, bursts out, often accompanied by violent thunderstorms, and frequently by clouds of dust which darken the air. The pampero, which has all the strength of a West Indian hurricane, seldom lasts more than a quarter of an hour; but in 1793 one blew without intermission for three days, and the estuary of the La Plata was laid bare for a distance of ten miles from the shore.

In the Northern States the vegetation is strictly tropical: palms are met with, and the natives cultivate the *coca plant*, the leaves of which are chewed as a stimulant. The algaroba and the *yerba maté*, a species of holly, from which Paraguay tea is obtained, are also grown. The Gran Chaco produces the cochineal cactus, and a species of aloe, from the fibres of which yarns and ropes are made. South of the Gran Chaco the vegetation resembles that of the south of Europe. The wild animals include the puma, jaguar, tapir, armadillo, guanaco (a species of the llama), and several kinds of monkeys. Among birds may be mentioned the *rhea*, or three-toed ostrich, the condor, humming-bird, and green parrot, as well as pigeons, ducks, and partridges. Serpents are not common, but insects are numerous, and some, such as the locust, very destructive.

People and Industry.—The population is nearly 2,000,000, and consists chiefly of the descendants of Spaniards and Indians. The Indians of the Gran Chaco are nomadic in their habits, and live chiefly on the produce of their flocks and the chase. Some few tribes, however, have fixed habitations, and cultivate the ground. The Indians of the south, who dwell between the Coloradó and Rio Negro, are a fierce race, and almost constantly at war with the States of the Confederation.

When Joseph Bonaparte was placed on the throne of Spain, the States which now form the Confederation refused to acknowledge him as their sovereign, and organised an independent government in 1810. Like all the other South American republics the government has been very unsettled, owing to jealousy among the separate states, and quarrels with Brazil. In 1835, General Rosas was appointed captain-general with almost absolute power. He succeeded in restoring order and in subduing the southern Indians. But all his efforts were directed towards maintaining the supremacy of Buenos Ayres, and accordingly several of the other states, combining with Brazil, Paraguay, and Uruguay, compelled him to leave the country, and he found a home in England (1851). Buenos Ayres, however, still continued the struggle, until 1858, when the present constitution was agreed upon.

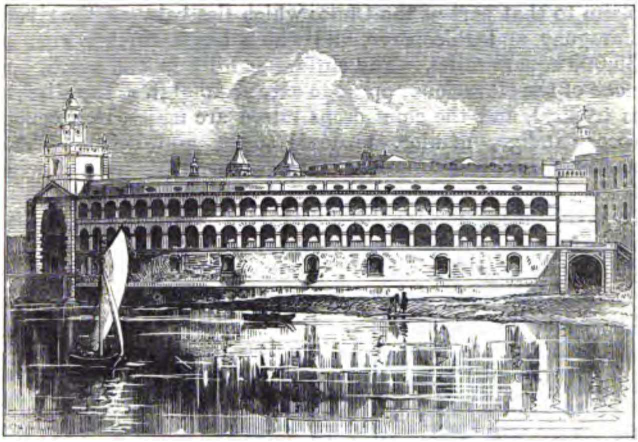
Agriculture is not much attended to, though wheat, maize, and rice are grown; and in the northern parts indigo, sugar, cotton, tobacco, and maté. The wealth of the country, however, consists in the immense herds of cattle and horses which increase with remarkable rapidity. The white settlers, who look after the large herds, are called *gauchos*, and live a wild half-savage life. Their chief article of dress is the *poncho* or cloak, and they live almost exclusively on beef and an infusion of maté, which is a kind of tea.

The horses and horned cattle which wander over the Pampas in vast herds are in a half wild state, and are captured when required, by the gauchos, by means of the lasso and the bolas. The *lasso* is a strong platted thong of green hide, about 40 ft. in length, with a running noose at one end, the other end being fixed to the saddle-girth. The gaucho when he wishes to secure an animal whirls the noose with a portion of the thong round his head, holding the rest of the thong coiled up in his left hand; and when near enough to his object flings off the noose, which seldom fails to secure the animal. If a horse, it invariably falls over the neck; if an ox, over the horns. The rider then suddenly turns his horse, which sets its legs in a position to resist the pull of the entrapped animal. The *bolas* is used chiefly by the natives of Patagonia. It consists of two round stones covered with leather, each weighing about a pound, and fastened together by a cord 8 ft. in length. One stone is kept in the hand and the other whirled round the head until it has gained sufficient velocity, and both are then discharged at the object. In hunting the ostrich or guanaco the Indian throws them in such a way that the cord twists round the legs of the animal, which then becomes an easy prey to the hunter. So expert are the Patagonians with this missile that they will hit a mark not bigger than a shilling, with both stones, at a distance of 15 yards.

The manufactures are of no importance: the chief branch of industry is the making of ponchos, which are something like a blanket with a hole in the middle, through which to pass the head; the finest are made in Santiago. In Cordova morocco leather and turned articles are manufactured; but articles of British manufacture are in use throughout the country. The commerce is considerable, and centres chiefly in Buenos Ayres. The chief articles of export are beef, hides, skins, tallow, and wool. There are nearly 700 miles of railway in working order, and 1680 in course of construction. There are thirteen lines of steamers from Europe; and a steady stream of emigration, chiefly from Italy.

Towns.—The chief towns are Buenos Ayres, Rosario, Parana, Cordova, Corrientes, Tucuman, and Mendoza.

Buenos Ayres, the capital of the Confederation, stands near the head of the estuary, where the width, however, is about 30 miles. The water is very shallow, and large vessels are obliged to anchor at a distance of twelve miles. Still the trade is very considerable, and the population amounts to 180,000. **Rosario,** about 210 miles above Buenos Ayres, is a rising town, and has direct communication with Europe by several lines of steamers. **Parana** is a small place, though it was at one time the capital of the Confederation. Nearly opposite to it stands *Santa Fé*, at the confluence of the Salado.



CUSTOM HOUSE, BUENOS AYRES.

Cordova, the second town in the country in point of population, is built on the banks of the Primero, the waters of which are absorbed in a lagoon to the east of the city. The streets are regularly laid out, and the houses, built of brick, are more substantial than in other towns of the interior. The university, erected by the Jesuits, covers four acres of ground. The population of Cordova is about 30,000: it is connected to Rosario by rail. **Corrientes,** a short distance below the confluence of the Parana and Paraguay, is agreeably situated on elevated ground, and is admirably adapted for commercial purposes. **Tucuman** is an important place near the source of the Rio Dolce. It is proposed to continue the railway from Cordova through Tucuman to *Salta* and *Jujuy*. **Mendoza** is situated at the foot of the Andes, on one of the most frequented roads that lead across the mountains. It is proposed to connect Buenos Ayres and Chili by a railway which will pass through Mendoza.

All the towns we have mentioned, except Rosario and Parana, are capitals of provinces which bear the same name. Rosario is the capital of the province of Santa Fé, and Parana of that called Entre Rios (between the rivers).

PARAGUAY.

Paraguay, the smallest state in South America, and the only one without a sea-board, lies between the rivers Paraguay and Parana, and extends northward to the parallel of 22° south. Its total area is 57,600 square miles, but it also lays claim to that part of the Chaco which lies between the rivers Paraguay and Pilcomayo, and which has a further area of 35,000 square miles. The surface is hilly in the north, but none of the elevations appear to exceed 2000 ft. The climate is tropical, and the chief crops raised are maize, rice, coffee, cocoa, indigo, manioc, tobacco, sugar, and cotton. The northern and eastern parts of the country are covered with forests which contain valuable timber, including the lapacho tree, celebrated for its durability, the caoutchouc, or india-rubber tree, and the "maté," or Paraguay tea-plant. The population is about 300,000, including about 10,000 Indians who inhabit the forest region. There are but few manufactures, and the yerba maté is the chief article of commerce.

The southern part of Paraguay, called the *Missiones*, attained a high degree of civilization under the Jesuit missionaries, who introduced Christianity among the aboriginal Indians, and ruled the country as an independent state for nearly two centuries; they were, however, expelled in 1768. In 1811, Paraguay threw off the Spanish yoke, but it refused to join the Argentine Confederation. Under the dictatorship of Lopez, the country attained a high degree of prosperity, but his ambition involved the country in a war with its powerful neighbours, which, lasting continuously for six years (1864-1870), completely ruined the country. It is said that, prior to the war, the population amounted to 1,400,000.

The chief towns are Asuncion and Villa Rica. **Asuncion**, the capital, stands on the eastern side of the Paraguay. Its chief trade is in maté, which is brought from the forests of the interior, and exported to the surrounding countries. The population is about 15,000. **Villa Rica**, to the south-east, has considerable trade in tobacco.

URUGUAY.

Uruguay, or Banda Oriental, lies on the north side of the estuary of the La Plata, and has an area of 70,000 square miles, with a population of about 400,000. Uruguay long formed debatable ground between Brazil and the La Plata States, but in 1825 it asserted its independence. This, however, was not acknowledged by the Argentine Confederation until 1852. Wheat and maize are the only cereals grown, and the wealth of the country depends upon its extensive pastures, which support large herds of horned cattle, horses, and sheep. The chief exports are wool, hides, horns, tallow, and Liebig's "extract of beef."

Monte Video, the capital, has a fine situation upon the estuary of the La Plata, and has considerable trade; the population is 90,000. **Maldonado**, at the entrance of the estuary, is an important harbour. **Colonia**, opposite to Buenos Ayres, is strongly fortified. **Fray Bentos**, on the Uruguay, contains large establishments for the preparation of Liebig's Extract.

PATAGONIA.

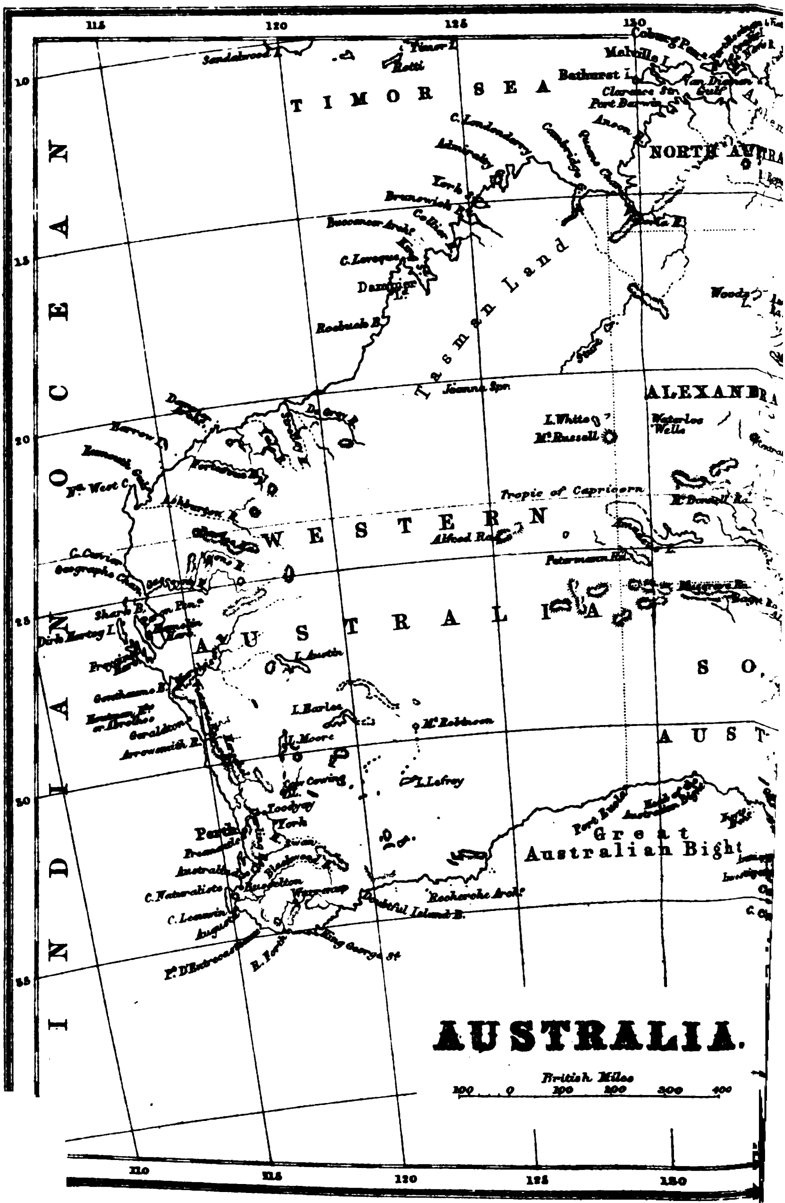
PATAGONIA lies at the southern extremity of the continent, and stretches from the Rio Negro to the strait of Magellan. Its area, exclusive of the strip along the Pacific coast, which is claimed by Chili, is about 350,000 square miles. The country consists of a series of terraces rising up from the Atlantic to the Andes, the highest of these platforms being about 3000 feet above the sea-level. The surface is a desert of shingle occasionally diversified by tufts of brown grass, or a few prickly shrubs. Salt lakes and saline incrustations are numerous, and the rivers flowing through deep ravines, or cañons, fail to fertilise the soil. Among these rivers are the Chupat, Desire, Chico, and Santa Cruz. The climate is cold and severe, as the prevailing north-west winds sweep over the snowy Andes. The inhabitants are a tall strong-built race of men, perhaps the tallest upon the globe. They lead a wandering life, and subsist chiefly on the flesh of mares, ostriches, and guanacoes. Some of the tribes, however, in the north-west, who speak the same language as the Araucanians of Chili, have attained a certain degree of civilization, and possess sheep and cattle. The whole country east of the Andes is claimed by the Argentine Republic, but it is practically independent.

There are no towns in Patagonia; but a small Welsh colony, under the protection of the Argentine Confederation, is established at the mouth of the Chupat; and there is another small colony at the mouth of the Santa Cruz.

THE FALKLAND ISLANDS.

The Falkland Islands form a group lying about the parallel of 52° south latitude, and 300 miles east of the Straits of Magellan. They consist of East Falkland, with an area of 3000 square miles; West Falkland, rather less, and upwards of 100 other small islets; the total area being 7600 square miles. The shores are rocky and much indented, and some of the inlets form excellent harbours. The western island has a greater average elevation than East Falkland, and its highest summit is **Mount Adam**, which, however, only reaches an elevation of 2315 ft. The climate is similar to that of England, but the winters are milder. The soil for the most part consists of barren moorland. There are no trees and but few bushes, and the summers are not hot enough to ripen wheat or fruits. The country, however, is well suited for grazing purposes, and green crops thrive.

In East Falkland there are a number of wild oxen and wild horses, and rabbits and pigs are plentiful. Ducks, geese, snipes, hawks, vultures, petrels, gulls, and the albatross are met with; but there are no reptiles. **Stanley**, the chief settlement, stands on the coast of East Falkland; the harbour called **Port William** is well sheltered, and affords good anchorage. It is much resorted to by vessels rounding Cape Horn, and by those engaged in the southern whale fishery. The exports consist of oil, hides, horns, hoofs, bones, tallow, and wool. The population in 1871 was 803.


TIMOR SEA
INDIAN OCEAN
NORTH AUSTRA
WESTERN AUSTRALIA
ALEXANDRA
SO.
AUST
Tasman Land
Tropic of Capricorn
Great Australian Bight
Sandalwood I.
Timor I.
Rotti
Melville I.
Bathurst I.
Coburg Pen.
Van Diemen Gulf
Clarence Str.
Port Darwin
C. Londonderry
Admiralty
Cambridge
York
Brunswick
Collier
Buccaneer Arch.
C. Leveque
Dampier L.
Roebuck B.
Joanna Spr.
Barrow I.
Fortescue R.
N. West C.
Ashburton R.
C. Cuvier
Shark B.
Dirk Hartog I.
Houtman Abrolhos
Geraldton
Arrowsmith R.
L. Austin
L. Barlee
L. Moore
L. Lefroy
Mc Robinson
L. White
Mc Russell
Waterloo Wells
Alfred Ra.
Petermann Ra.
Musgrave Ra.
Woods L.
Toodyay
York
Perth
Fremantle
Australind
C. Naturaliste
C. Leeuwin
Augusta
Busselton
Blackwood R.
Doubtful Island B.
Recherche Arch.
King George Sd.
Port Eucla
AUSTRALIA.
British Miles
100 0 100 200 300 400
115
120
125
130
110
10
15
20
25
30
35

William Collins Sons

Papua
Torres Strait
C. York
Endeavour Str.
Shelburne B.
C. Arnhem
Wessel I.
Melville B.
Gulf of
Carpentaria
Cape
York
Peninsula
C. Direction
Princess Charlotte B.
C. Melville
CORAL
SEA
C. Flattery
Wellesley I.
Normanton
Burketown
C. Tribulation
C. Grafton
Rockingham B.
Hinchinbrook I.
Halifax B.
Bowling Green B.
Port Denison
Bowen
Cumberland Is.
C. Palmerston
Northumberland Is.
Broad Sound
Port Bowen
Rockhampton
Keppel B.
Curtis I.
Port Curtis
Burnett R.
Hervey Bay
Sandy C.
Gr. Sandy I.
Wide B.
Maryborough
Gayndah
Moreton Bay
Moreton I.
Stradbrooke I.
Brisbane
Ipswich
Toowoomba
Leyburn
Pt. Danger
Mt. Lindsay
Shoal R.
Grafton
Ben Lomond
Armidale
R. Mc Leay
Port Macquarie
Sugar Loaf Pt.
Newcastle & Port Hunter
Hawkesbury R.
SYDNEY & Port Jackson
Botany B.
Shoalhaven R. & Riv.
Jervis B.
Bateman B.
C. Howe
QUEENSLAND
NEW SOUTH WALES
VICTORIA
MELBOURNE
Ashburton Ra.
Mc Donall Ra.
Hugh Ra.
Central Mt. Stuart
Gr. Stony Desert
L. Eyre
L. Torrens
L. Frome
L. Gregory
Port Augusta
Eyria Pen.
Spencer G.
Wallaroo
Kapunda
Adelaide
Burra Burra
R. Murray
Investigator Str.
Kangaroo I.
L. Alexandrina
Encounter B.
Kingston
Robe T.
Grey T.
Portland
Belfast
Warnambool
Geelong
C. Otway
Port Phillip
Wilson's Prom.
Bass Strait
King I.
Hunter Is.
Furneaux Is.
TASMANIA
Macquarie Har.
Launceston
Hobart Tn.
Tasman Pen.
South C.
Bathurst
Goulburn
Windsor
Euston
Cooper Cr.
Barcoo R.
Darling
Lachlan
R. Murrumbidgee
Mt. Kosciusko
SOUTH PACIFIC OCEAN
140
145
150
155
10
15
20
25
30
35
40

...London & Glasgow.

AUSTRALASIA.

UNDER the term Australasia we include Australia, Tasmania, New Zealand, and other British Possessions in the South Pacific.

AUSTRALIA.

POSITION AND EXTENT.—The continent of Australia lies between the Pacific and Indian Oceans, and extends from 10° 42′ to 39° 9′ south latitude; and from 113° to 153° 47′ east longitude. Its length from east to west is about 2400 miles; its extreme breadth, from Cape York to Wilson's Promontory, is about 2000 miles; and the area has been estimated at 3,000,000 square miles.

COAST-LINE.—Australia is compact in form, and possesses few large indentations; in this respect it resembles Africa and South America rather than the Northern continents. The east coast of Australia is rugged and rocky, as a chain of mountains runs along the whole coast-line at no great distance from the sea. Off the north-east coast, and at an average distance of thirty miles from it, runs the **Great Barrier** reef, which extends from Torres Strait in a south-east direction for a distance of 1260 miles. The channel between the barrier and the mainland, though narrow, is deep and sheltered; and there are a few openings in the reef affording a passage for vessels to the sea beyond.

Commencing at **Cape York** the coast runs south-eastward to Hervey Bay, and the chief inlets are Princess Charlotte Bay, Halifax Bay, Broad Sound, and Keppel Bay: the chief capes, Melville and Grafton. **Hervey Bay** is protected on the east by a large island which terminates on the north in Sandy Cape. From this point the coast runs almost due south to **Moreton Bay,** a large inlet sheltered by Moreton and Stradbroke Islands. **Point Danger** marks the southern boundary of Queensland. Further south is **Cape Byron,** and the coast then runs in a south-west direction to Cape Howe. This part of the coast contains numerous harbours, among which may be mentioned Shoal Bay, Port Macquarie, Port Stephens and **Port Jackson** which stretches about 15 miles inland and has numerous branches. From **Cape Howe to Corner Inlet** the coast is low and lined with salt lagoons; but at Wilson's Promontory, cliffs rising from 500 to 1000 feet begin to appear, and the shores becomes broken, and is indented with numerous harbours. Passing Western Port we reach **Hobson's Bay,** a magnificent basin 30 miles in diameter, though the entrance is only a mile and a half wide. From **Cape Otway** a low and unbroken coast runs north-west to **Encounter Bay.** This bay communicates with the large shallow inlets known respectively as Lakes Alexandrina and Albert.

Captain Cook explored the whole eastern shore of Australia, from Cape Howe to Cape York, in the year 1770. Towards the close of the century, Mr. Bass, a surgeon in the English navy, discovered the channel which separates the continent from Tasmania. He also, in company with Captain Flinders, afterwards surveyed a great portion of the southern coast; in the course of their explorations they met with a French vessel engaged in discovery, and from this circumstance they named the place of meeting Encounter Bay.

We have now reached the **Gulf of St. Vincent,** which is separated from **Spencer Gulf** by Yorke Peninsula. At the entrance to the Gulf of St. Vincent is **Kangaroo Island,** which forms a natural breakwater. The entrance to Spencer Gulf lies between Capes Spencer and Catastrophe. The coast now forms a large curve leading round to King George's Sound. This large bend is known as the **Australian Bight.** The shores are for the most part flat, sandy, and barren, and occasionally skirted with low sand hills. Throughout almost the entire length, a distance of 1500 miles, the coast is unbroken by a single stream. In the neighbourhood of **King George's Sound** the shore becomes bold, and in some parts is well wooded. Passing Flinders Bay, Cape Leeuwin, and Geographe Bay, we find the coast running almost due north to Shark Bay, and its rocky character continues.

The southern part of **Shark Bay** is divided into two parts by the **Peron Peninsula;** on the east is Hamelin Bay; on the west Freycinet Harbour. The latter is protected on the western side by **Dirk Hartog Island,** to the south of which is Steep Point.

Following the coast from Shark Bay we pass Cape Cuvier and **North-West Cape,** and reach Exmouth Gulf. The shore now runs to the north-east, and passing **Dampier Archipelago** there is nothing to detain us until we reach **C. Leveque.** The coast, so far as it is known, seems to be low, sandy, and barren. Continuing our course to the north-east we pass **Cape Londonderry,** Cambridge Gulf, and Port Darwin, and reach **Van Diemen Gulf**, which is landlocked by the islands of Bathurst and Melville, and by Coburg Peninsula.

It was the shores of this gulf that Mr. Stuart reached after his adventurous journey across the continent from Adelaide in 1862. A settlement is now established at **Port Darwin**, which is connected by telegraph with Port Augusta, near the head of Spencer Gulf on the one hand, and with Singapore on the other. Thus there is now direct telegraphic communication between Great Britain and her Australian colonies; and the line has recently been extended to New Zealand.

The coast now runs due east to the **Gulf of Carpentaria**, the largest inlet on the Australian coast. The shores are low in general, but the coast is well watered. Flinders river, which enters the gulf near its southern extremity, was the river reached by Burke and his companions when they crossed the continent from Melbourne (1861). They did not reach the shores of the gulf, but followed the river down until the tide was clearly perceptible. **Torres Strait**, which separates Australia from New Guinea, is about 90 miles wide; and navigation is very dangerous owing to numerous coral reefs. The total length of coast-line in Australia is about 8000 miles.

SURFACE.—The continent of Australia, like that of Africa, seems to consist of a belt of elevated land surrounding a shallow depression in the interior. The main chain of mountains is that known as the **Dividing Range**, which may be traced with more or less distinctness, and with increasing elevation, from Cape York to Wilson's Promontory. The surface of Queensland, as is indicated by the course of the rivers, seems to rise from the north and east coasts to a table-land of moderate elevation in the interior; and the coast range is known in different parts under the names of Leichhardt Range, Peak Range, and Darling Downs. South of the Darling Downs, the Dividing Range is known as the Liverpool Range, Blue Mountains, and Australian Alps.

Mount Lindsay, on the borders of Queensland and New South Wales, attains an elevation of 5700 ft., and is the highest point in the Liverpool Range. This chain runs southward to the parallel of 32°, and then turns off to the west. The **Blue Mountains**, however, continue the meridional direction, and terminate on the south coast. They are remarkable for the grandeur of their scenery, and contain numerous chasms and precipices, huge walls of rock sometimes rising 2000 ft. in perpendicular height. The **Australian Alps** commence in latitude 35°, and for some distance run parallel with the Blue Mountains which they exceed in elevation. **Mount Kosciusko**, on the borders of Victoria, attains a height of 7308 ft., and is thus the loftiest summit in the Dividing Range. On entering Victoria the "Alps" turn westward, and form the watershed between the Murray and the streams which flow southward. In the western part of the colony the watershed is formed by the **Pyrenees** and **Grampians.** The country between the Blue Mountains and the sea is an undulating and well-watered region, with a breadth varying from 30 to 90 miles. To the west of the range the surface slopes gradually to the basin of the Darling, but contains some isolated summits of considerable altitude; among these is Mount **Canobolas**, near Bathurst, which reaches a height of 4460 ft.

The watershed of the northern part of Australia is the edge of a sandstone plateau which runs from east to west about the 20th parallel of latitude. In the east this edge or terrace has an elevation of 2000 ft., but it diminishes westward to about 800 ft. A similar plateau seems to extend along the west coast, but from the neighbourhood of Shark Bay, a well defined range may be traced which runs southward under the names of **Victoria, Herschell,** and **Darling Ranges.** The south coast of Australia, from King George Sound to Spencer Gulf, is formed by a flat table-land, of granite and limestone, elevated about 300 ft. above the sea, and almost destitute of water. In the colony of South Australia there are several ranges, though some of them are not of great elevation. On the eastern side of the Gulf of St. Vincent is a range rich in copper and other minerals. Farther north, **Flinders Range** extends from the head of Spencer Gulf to Mount Hopeless. On the western side of Spencer Gulf is the **Gawler Range,** which forms the northern boundary of the Eyria Peninsula; and farther inland, and parallel with it, is the **Stuart Range.**

The interior of Australia seems to consist of extensive plains crossed in various parts by low hill ranges. The plains are in some parts sandy and barren; in others covered with thin grass, or thick belts of scrub. The great drawback to the colonization of the interior is want of fresh water; but even in the most arid districts the natives contrive to exist. It has been suggested, as an explanation of the conflicting accounts of travellers who have explored the interior, that the surface consists of alternate belts of barren and fertile land running in a north and south direction.

MINERALS.—Australia is especially rich in gold and copper. **Gold** is found in greater or less abundance along the whole inland slope of the Dividing Range, and hence it is an important article of export from all the three eastern colonies; but Victoria is especially celebrated for its gold mines. **Copper** is found in the district on the east side of Spencer Gulf in greater abundance perhaps than in any other part of the world. **Lead** is also found in the same locality, as well as in Western Australia. **Coal** has been met with on the east coast, in the district of Hunter's river, and also in Queensland and Western Australia. Iron, tin, zinc, marble, and good building stone have been found in various parts.

Gold was first discovered in Australia at a place near Bathurst in the year 1851. The news caused great excitement, and there was a "rush" to the spot. Within a few weeks the excitement was greatly increased when it was announced that a native shepherd had found an immense nugget. It was broken up in order to facilitate its removal, but the largest fragment yielded 60 pounds of pure gold. Shortly afterwards the precious metal was found in Victoria, and this colony, which about this time was separated from New South Wales, henceforward took the lead in the export of gold. In 1858 the "welcome nugget" was discovered near Ballarat. It rivalled in size the mass of ore found by the native shepherd, and yielded 2000 ounces of pure gold.

Rivers and Lakes.—The interior of Australia is deficient in fresh water, whether in the form of springs, rivers, or lakes. The lakes are pretty numerous but shallow, and generally salt. Many of the rivers never reach the sea, but are lost in swamps and salt marshes. The river Murray is the only one of considerable length, but there are numerous shorter streams, especially on the east and northern coasts. The principal streams on the east coast, commencing in the south, are the Shoalhaven, Hawkesbury, Hunter, Clarence, Brisbane, Fitzroy, and Burdekin; on the north, the Mitchell, Flinders, Albert, Roper, and Victoria; on the west, the De Grey, Gascoyne, Murchison, Swan, and Blackwood.

The **Murray** rises in the neighbourhood of Mount Kosciusko, and for a considerable distance forms the boundary between Victoria and New South Wales. Its first considerable feeder is the Murrumbidgee which brings with it the waters of the Lachlan. Flowing now to the north-west the main stream next receives the Darling, which drains a large extent of country. The Darling rises in the Liverpool range, on the borders of Queensland, and for some distance forms the boundary of that colony. It is joined on the left bank by the Bogan, Macquarie, and Castlereagh; and on the right by the Condamine, Warrego, and Parru. The Macquarie, in the upper part of its course, is an important stream, but it afterwards disappears in an extensive swamp, from which two small rivulets issue and flow into the Darling. The Condamine is of considerable length, and rises in the neighbourhood of Mount Lindsay. After receiving these streams the Darling flows south-west to Menindie, and then due south to its confluence with the Murray. This stream continues to flow westward for about 200 miles, and then turning to the south empties itself into Lake Alexandrina, which communicates with Encounter Bay by a narrow channel called the *Goolwa*, the entrance to which is beset with breakers. The total length of the Murray, measured to the source of the Condamine, must be at least 3000 miles; but the Murray proper is not more than 2000 miles in length.

Of all the streams which make up this large water system, the Murray and Murrumbidgee are the only two that deserve the name of rivers; the rest only flow in flood time. Most of the streams depend upon the rains and snows of the mountains for their supply, and in their passage through the plains lose a large portion of their water by absorption and evaporation. In one part of the year they leave the mountains as foaming torrents, and spread over the plains in vast marshes; in the dry season they dwindle down to trifling brooks, even in the mountains, and in the plains are a mere succession of pools or a dry channel. *Lake Alexandrina* is a large shallow lake with a depth varying from 6 to 9 feet. On the eastern side it communicates with Albert Lake, and in the south with Lake Coorong, a long narrow channel of salt water separated from Encounter Bay by a narrow tongue of land resembling the Nehrungs of the Baltic.

In South Australia there are a number of large shallow lakes, most of which are salt. Among these are *Lake Gairdner*, *Lake Torrens*, and *Lake Eyre*. The last mentioned probably receives, during the rainy season, the drainage of a large inland stream, known in different parts as the river Victoria and Cooper's Creek. In 1857 Mr. Gregory identified Victoria river with **Cooper's Creek**, and traced the latter down to Lake Eyre. The lake he described as a fine sheet of water, containing steep islands and wooded shores, while the water itself was not at all salt.

CLIMATE.—As the northern portion of the continent lies within the tropics, the climate there is very hot, though the heat is tempered to some extent by the elevation of the land. The southern half of the continent has a climate resembling that of Cape Colony or Natal. The average annual temperature at Melbourne is the same as that at Cape Town, 60°; that of Sydney corresponds with D'Urban, the port of Natal; Brisbane is warmer. In northern Australia the winds blow with great regularity; a north-west monsoon prevails from October to April, and a south-east monsoon from April to October; the rains also are regular and heavy.

The southern half of Australia, like Cape Colony, is upon the whole deficient in moisture, but what rains there are generally fall in the winter season, which corresponds to our summer. The rains also are very irregular in all the eastern colonies except Queensland, and this no doubt is one reason why the rivers vary so much in the quantity of water they contain. Another drawback from which these colonies suffer is the inconvenience occasionally arising from the *hot winds* blowing from the interior. But in spite of these drawbacks the climate is extremely healthy for Europeans; and both the plants and animals of Europe are easily acclimatised.

VEGETATION.—Most of the trees in Australia are evergreens, and they consist chiefly of acacias, gum trees, arborescent ferns, and gigantic nettles.

The *blue gum* is a magnificent tree, sometimes reaching a height of 300 ft., and its timber is noted for strength and durability. It has been introduced into Algeria, the south of France, and into some parts of England, and is much valued as it grows rapidly; and, owing to its powers of absorption, soon renders malarious swamps dry and healthy.

On the north coast of Australia the vegetation is of a tropical character. Here a few palms are met with, and various species of the nutmeg tribe, sandal-wood, and other trees characteristic of the Indian Archipelago. The native flowers are often beautifully tinted, but are generally without perfume. The native grasses are thin and poor, and, with the exception of a few berries, no edible fruits are indigenous; but the grains and fruits of Europe have been introduced and bear abundant crops.

ANIMALS.—The native animals of Australia are very peculiar. Most species of the mammalia belong to the order of marsupials or pouched animals, and they vary in size from the large kangaroo to an animal about the size of a mouse. The three orders of quadrumana (monkeys), pachydermata (thick-skinned animals resembling the elephant, horse, and hog), and ruminantia (such as the ox, deer, and sheep) are entirely wanting; while the only carnivorus animal is the *dingo* or wild dog. The birds again are often of brilliant plumage, but destitute of song. There is almost a total absence of those which are useful to man, such as domestic fowls, but native turkeys and pheasants abound. The *emu*, a kind of ostrich, is the largest native bird, but it is now scarce. Parrots, cockatoos, and honeysuckers are common; and on the north coast birds of paradise are met with. Reptiles are scarce. Snakes are common in the interior.

The *bower-birds*, a species of magpie, are met with in Australia. They are so called because they construct a sort of bower or arbour of twigs, which they adorn with shells and feathers, and then amuse themselves by running round and through the structure in a kind of dance. The black cockatoo is peculiar to Australia, as is also the black swan.

All the domestic animals of Europe have been introduced into the Australian continent with success. Horses and cattle are numerous at all the stations. Thousands of sheep pasture on the uplands, singing birds are now heard in the woods, while rabbits and hares have become almost as numerous as in this country.

HISTORY.—The total white population of the continent is about 1,600,000; to these must be added the natives, who, however, are not numerous, though their exact number it is impossible to determine. The natives belong to the **Papuan** division of the Malay race. They have dark skins, long black hair, and a stature below that of Europeans. In some of the colonies, especially in South Australia, a small number have attained a certain degree of civilization, and are employed as shepherds or herdsmen. But those met with in the interior are in the lowest stage of barbarism, are almost destitute of clothing, have no settled habitation, and subsist on roots, fish, or the flesh of animals killed in the chase. Their chief weapons are the bow, spear, and the boomerang. They are not naturally cruel, and have sometimes shown great hospitality to white men who have fallen into their hands. Like all savage tribes they possess keen sight and acute observation, and they can detect the presence of water, so essential to the traveller, where the sagacity of white men has been completely baffled. There is little doubt that they are gradually diminishing in number, and will eventually die out.

The history of colonization in Australia commences with Captain Cook, who explored all the east coast of the continent in 1770. Within twenty years from that date, a settlement had been established on the shores of Port Jackson, and the foundation of the colony of New South Wales was laid. In 1813 a passage was discovered across the Blue Mountains, and the colonists found new pastures for their flocks on the plains of the Darling. Captain Sturt explored the course of the Murray, and in 1834 the colony of South Australia was established. This colony sent out various expeditions to explore the interior. Captain Sturt, starting from Adelaide, advanced north as far as Cooper's Creek, and, after penetrating half way across the continent, was stopped by a *Stony Desert* (1845). Mr. Eyre, after following Flinders range as far north as Mount Hopeless, gave up the attempt in that direction, and afterwards succeeded in making a remarkable journey from Adelaide to King George's Sound, which he reached in 1848. In the meantime, Dr. Leichhardt, starting from Moreton Bay, had made his way to Port Essington on the north coast. In 1848 he again started from Moreton Bay with the intention of crossing the continent from east to west, but no member of the expedition was ever heard of afterwards.

The southern part of New South Wales was erected into a separate colony in 1851, under the title of Victoria, and to this colony belongs the honour of having equipped an expedition which first crossed the continent from sea to sea. Towards the close of 1860 this expedition started from Melbourne under command of Mr. O'Hara Burke. Having reached Cooper's Creek with a portion of the expedition, Burke, taking with him three companions, Wills, Grey, and King, started with camels for the Gulf of Carpentaria. They succeeded in reaching a spot on Flinders river where the tide was clearly perceptible, and then returned. On reaching Cooper's Creek in April of the following year, they found the depôt which they had left deserted, and overcome with famine and fatigue, Burke and two of his companions perished, but King succeeded in reaching Melbourne. In the following year Mr. Macdouall Stuart, who had accompanied Sturt in his expedition to Cooper's Creek in 1849, succeeded in crossing the continent from Adelaide to the shores of Van Diemen's Gulf. A line of telegraph has been carried along the route followed by Stuart, and there are stations established at intervals along the whole line.

The colony of Western Australia was established in 1829, but its progress has not been so rapid as that of the eastern colonies. Several expeditions have been sent out of recent years to explore the country lying between this colony and the telegraph line. Two of the more eminent explorers connected with this part of the continent are Col. Egerton Warburton and Mr. Forrest. Col. Warburton started from Alice Springs, a station on the telegraph line, about the parallel of 23° south, in April 1873. His journey lay along the north side of the M'Donnell ranges which stretch westward about two hundred miles. When these hills were left water failed, the grass turned to spinifex, and the soil to sand. After months of intense suffering, the expedition succeeded in reaching the Oakover, a branch of the De Grey river, without loss of life. The first expedition, commanded by Mr. Forrest, was sent out by Western Australia in 1869. It had been rumoured that some traces of Leichhardt's expedition had been met with in the interior, but though Forrest advanced as far as lon. 122° 50′, and lat. 28° 41′, nothing was found. In the following year, Forrest was sent out by the same colony to explore the route that had been followed by Mr. Eyre about twenty years before. He succeeded in accomplishing the whole journey, a distance of 2000 miles, without losing a horse, and a telegraph line is now in course of construction between King George's Sound and Adelaide. In April 1874, he started from the Murchison river, on the west coast, for the purpose of exploring the country south of the track followed by Col. Warburton. The country was pretty much the same as farther north. Day after day nothing was seen but spinifex, a dry prickly grass utterly devoid of nutriment for horses. Occasionally a few grassy valleys of small extent were met with, such as that of Weld Spring, in lon. 121° 21′, where water was abundant, kangaroos and emus numerous, and pigeons innumerable. Mr. Forrest kept generally to the parallel of 26°, and at length, in September, he succeeded in reaching Peake Station, on the telegraph line, in safety.

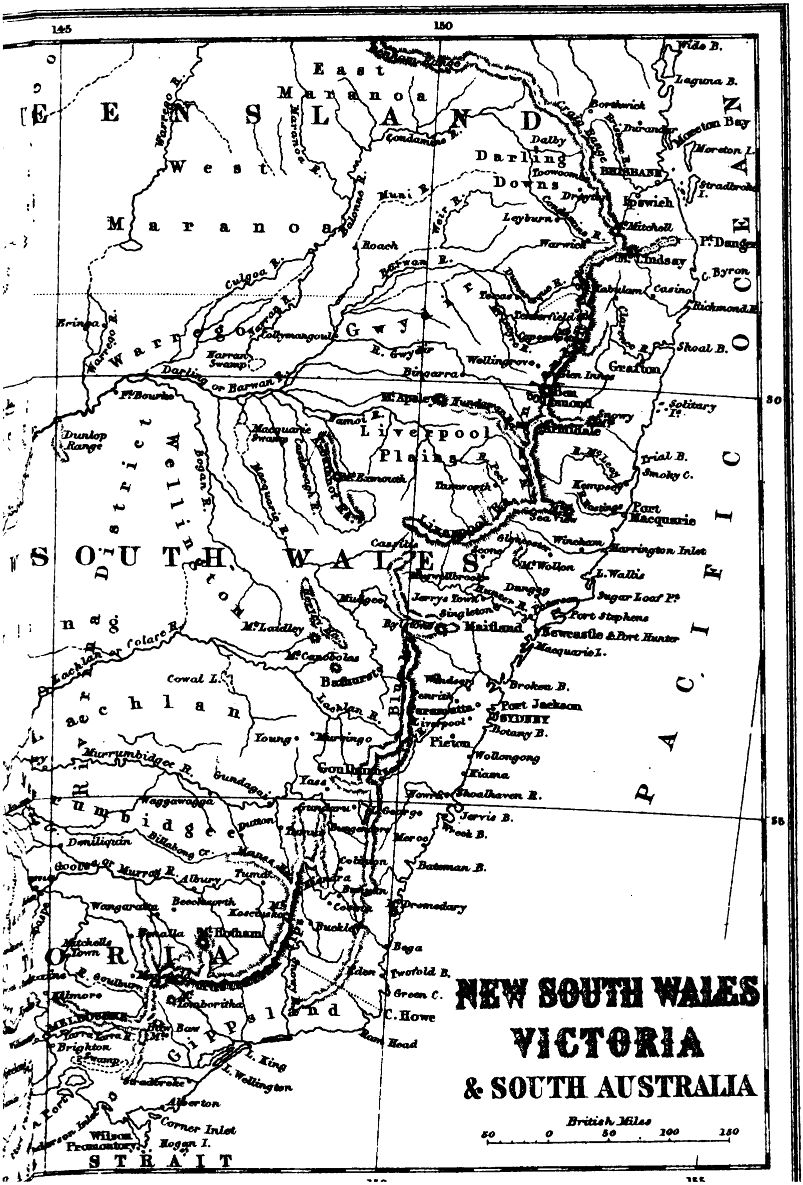
COLONIES. — Australia is at present divided into five colonies: Queensland, New South Wales, Victoria, South Australia, each of which has its own governor and legislature, consisting of an Upper House and an elected Assembly; also West Australia, with a governor only.

Queensland was erected into a colony in 1859. It is separated from New South Wales by a line drawn from Point Danger south-west to the upper course of the Darling, and then along the 29th parallel to the eastern boundary of South Australia. Northward it extends to Cape York, and its western boundary is the meridian of 138° east. The total area is about 678,000 square miles, or more than five times the size of the United Kingdom. The Dividing Range from Point Danger to Cape York, together with another chain which joins it at right angles about the parallel of 22° south, divides the colony into four parts, called respectively the Pacific Coast, Carpentaria, Western Interior, and Darling. The Pacific coast has a tropical climate, and produces cotton, sugar, indigo, arrowroot, tea, and coffee. In this district also are valuable mines of gold and copper. In the Darling district the country is hilly, the climate genial, and the whole district is suitable for sheep pasturage, and for the growth of European grains and fruits. The other districts are not so well known, but settlements are springing up on the shores of Carpentaria. The population of this vast territory is less than 200,000. The chief exports are wool, cotton, gold, copper, tin, and timber.

There are valuable **gold** mines at Gympie, on the Mary river, to the south of Hervey Bay; in the Leichhardt district which contains the Peakdown gold and copper mines; and on the Palmer river, about 200 miles north of Rockingham Bay. Among the valuable timber obtained from this colony are the Moreton Bay pine and the Queensland cedar. The chief towns are **Brisbane**, the capital, with a population of 24,000; **Ipswich**, a little further up the river; **Maryborough**, in the neighbourhood of the Gympie gold-field; **Rockhampton**, on the Fitzroy; **Cooktown**, on the Endeavour river, the port of the "Palmer" gold-fields.

New South Wales is bounded on the north by Queensland, on the west by the 141st meridian which separates it from South Australia, and on the south by the river Murray which separates it from Victoria. It comprises an area of 323,000 sq. miles, and a population of nearly 600,000, including about 1000 natives. The surface is naturally divided into three parts: the coast district, the mountains, and the plains of the interior. The climate is warm and healthy, the only drawback being the periodical droughts. The colony is rich in minerals, including gold, coal, copper, and tin. **Gold** is found in all parts of the colony, but chiefly on the western slopes of the Dividing Range. The **coal** measures extend from the northern boundary of the colony to the 35th parallel, and crop out at the water's edge along many miles of the sea-board. The principal mines at present are in the neighbourhood of Newcastle, on Hunter river. Agriculture forms an important branch of industry, and one of the most extensive and prolific crops is *maize* or Indian corn. The *sugar cane* thrives in many parts, but its cultivation is chiefly carried on to the north of the 32nd parallel, on the banks of the Macleay, Clarence, and Richmond. The *vine*

SOUTH AUSTRALIA
Lake Eyre
Lake Gairdner
Eyria Peninsula
Spencer Gulf
St. Vincent G.
Kangaroo I.
Encounter Bay
Investigator Strait
Princeland
Wimmera
INDIAN OCEAN
NEW
VICT
Q U
Stony Desert
Barcoo R.
Delta of Cooper Creek
Cooper Cr.
L. Gregory
L. Blanche
Grey Range
L. Frome
Port Augusta
Black Rock Hill
Port Germain
Kadina
Wallaroo
Port Wakefield
Gawler
ADELAIDE
Wellington
L. Alexandrina
L. Albert
Murray
Darling
Wentworth
L. Tyrrell
L. Hindmarsh
Kingston
Robe Town
Gray Town
C. Northumberland
Discovery B.
Portland B.
C. Otway
Geelong
Ballarat
Sandhurst
Loddon
Port Lincoln
C. Catastrophe
C. Spencer
Kingscote
C. Willoughby
Lacepede B.
C. Bernouilli
30
35
135
140
William Collins



NEW SOUTH WALES
VICTORIA
& SOUTH AUSTRALIA
British Miles
50 0 50 100 150
145
150
30
35
East Maranoa
West Maranoa
Darling Downs
Liverpool Plains
Warrego
Gwydir
Wellington District
Lachlan
Murrumbidgee
Gippsland
SOUTH WALES
STRAIT
PACIFIC OCEAN
Moreton Bay
Moreton I.
Wide B.
Laguna B.
BRISBANE
Ipswich
Dalby
Toowoomba
Drayton
Leyburn
Warwick
Condamine R.
Stradbroke I.
C. Byron
Casino
Richmond R.
Shoal B.
Grafton
Solitary Is.
Armidale
Trial B.
Smoky C.
Kempsey
Port Macquarie
Tamworth
Harrington Inlet
Sugar Loaf Pt.
Port Stephens
Maitland
Newcastle & Port Hunter
Singleton
Broken B.
Port Jackson
SYDNEY
Botany B.
Picton
Wollongong
Kiama
Shoalhaven R.
Jervis B.
Bateman B.
Bega
Twofold B.
Eden
Green C.
C. Howe
Ram Head
Bathurst
Lachlan R.
Goulburn
Yass
Young
Gundagai
Murrumbidgee R.
Wagga Wagga
Deniliquin
Billabong Cr.
Albury
Tumut
Beechworth
Wangaratta
Kosciusko
Benalla
Mt. Hotham
Kilmore
Brighton
Yarra Yarra R.
Mitchells Town
Cowal L.
Mudgee
Wellington
Dubbo
Cassilis
Murrurundi
Jerrys Town
Windsor
Penrith
Paramatta
Liverpool
Mt. Canobolas
Mt. Laidley
Culgoa R.
Balonne R.
Maranoa R.
Warrego R.
Barwan R.
Darling or Barwan R.
Pt. Bourke
Dunlop Range
Bogan R.
Macquarie R.
Macquarie Swamp
Castlereagh R.
Namoi R.
Gwydir R.
Bingarra
Roach
Weir R.
Mt. Lindsay
Tenterfield
Wellingrove
Glen Innes
Apsley
Mt. Exmouth
Liverpool Ra.
Scone
Gloucester
Wincham
Dungog
Hunter R.
L. Wallis
Macquarie L.
Cooma
Bombala
Buckley
Mt. Dromedary
Moroo
Cobbitty
L. King
L. Wellington
Alberton
Corner Inlet
Wilson Promontory
Hogan I.
Stradbroke
Narran Swamp
Eringa
Lachlan or Colare R.
Murray R.

will grow in all parts of the coast district, and the wines of Albury, on the Murray, are famous throughout Australia. The orange, olive, and mulberry are also cultivated, and of late years considerable attention has been paid to the growth of tobacco. But **sheep-farming** forms the chief branch of industry in the colony, and in 1872 the quantity of wool exported exceeded 50,000,000 lbs., the value of which was £3,342,900. In 1874 there were 400 miles of railway open, and nearly 300 more in process of construction. Amongst the chief towns are Sydney, Newcastle, Maitland, Goulburn, Parramatta, and Bathurst.

SYDNEY.

Sydney, on the southern shore of Port Jackson, is the oldest town in Australia, having been founded in 1788. It is now a handsome town, and possesses a university, an observatory, and a royal mint. The population exceeds 150,000. Sydney is connected by rail with Bathurst on the one hand, and Goulburn on the other. **Newcastle** stands on a commodious harbour, at the mouth of the Hunter, about 50 miles north of Sydney. The principal coal mines in the colony are within a distance of ten miles of the town. A railway starts from Newcastle and runs inland for a distance of 120 miles. **Goulburn**, to the south-west of Sydney, stands in the midst of a great agricultural district. **Parramatta**, on a river of that name, is picturesquely situated among vine-clad hills and orange plantations. **Bathurst**, on the upper part of the Macquarie, was the first place in Australia where gold was discovered. It is still the centre of a rich gold district.

Victoria was erected into a separate colony in 1851. It is bounded on the north by the river Murray, on the west by South Australia, and on the east and south by the sea. The total area is only 88,000, but the population exceeds 800,000. The Australian Alps, which enter the colony on the north-east, are continued westward under the names of Pyrenees and Grampians; but a spur from the chain runs southward to Wilson's Promontory. The south-east corner of the colony thus cut off by mountains is called Gipp's Land. It has a cool and rather damp climate, the snow remaining on the high lands a great part of the year. The mean annual temperature for the whole colony is 58°, or about 8° above that of England. The prosperity of Victoria has been caused by its rich **gold-fields**, and gold still forms one of its chief articles of export. The chief mining centres are Ballarat, Stawell, Beechworth, Sandhurst, Castlemaine, and Gipp's Land. Other minerals comprise silver, copper, tin, and coal.

MELBOURNE.

Agriculture was formerly neglected, but of late it has much improved. The chief crops raised are wheat, oats, and potatoes. The vine also thrives well, and both brandy and wine are produced. *Sheep-farming*, however, as in New South Wales and Queensland, forms the chief employment of the people, and the amount of wool exported exceeds that of New South Wales. The chief towns are Melbourne, Ballarat, Sandhurst, Castlemaine, Geelong, Warrnambool, and Portland.

Melbourne, the capital, stands upon the Yarra Yarra about 8 miles from its embouchure in Port Philip. The town was founded in 1837, and has now a population of over 200,000. The streets are wide, and intersect each other at right angles; and there are several public parks and gardens. The Yarra Yarra is very shallow, ships therefore discharge their cargoes at *Williamstown* and *Sandridge* Wharves. **Ballarat** is the chief town engaged in gold mining. Everywhere in the neighbourhood are to be seen tall chimneys, engine-houses, and heaps of refuse. The population is about 25,000. **Castlemaine** and **Sandhurst**, lying to the north, are other important mining centres; the latter has a population exceeding 20,000. All these towns are connected to Melbourne by rail. **Geelong**, at the head of a deep inlet on the western side of Port Philip, is the outlet for a rich agricultural district. There is rail to Melbourne. **Warrnambool** and **Portland** are also thriving places, with populations between 10,000 and 20,000.

South Australia now extends right across the continent from south to north, and is bounded by the meridians of 129° and 141° east lat. The total area exceeds 900,000 square miles, and the population is 205,000 exclusive of aborigines. Of the central and northern portions of this vast area, very little is known. The overland telegraph line crosses a fertile belt of country of an undulating character, but on either side appear large sandy tracts thinly covered with spinifex grass, and almost destitute of water. The southern and older part of the colony has a surface diversified with numerous hill ranges, and containing several lakes. The climate is said to resemble that of Sicily or Naples, and is very agreeable except in the summer months —December, January, and February,—when the sun attains great power, and hot winds from the interior prevail. The chief employments of the people are those connected with agriculture and mining. Copper, lead, and silver are the chief minerals, but **copper** is by far the most important. The chief mines are those of Moonta (in Yorke Peninsula), Wallaroo, and Burra, and about 5000 persons are employed in working them. Agriculture and sheep-farming, however, form the chief employments of the settlers, and *wheat* is an important article of export to the neighbouring colonies. Vineyards also cover a large area, and vine culture is rapidly spreading. The chief exports are wool, bread-stuffs—chiefly wheat and flour; and copper. Large shipments of all these are annually made to England. The chief towns are Adelaide, Gawler, Glenelg, Kapunda, Kooringa, Port Elliot, Port Lincoln, and Port Pirie.

Adelaide, the capital, stands upon the river Torrens, about 4 miles from its mouth. It is a well-built and thriving place, and, including its suburbs, the population is 35,000. The Torrens is an insignificant stream and unnavigable, but the capital is connected by rail with *Port Adelaide*, which stands on St. Vincent's Gulf, about 8 miles distant. The capital is connected by telegraph with Port Darwin, on the northern coast; and this line joins the submarine cable to England. Adelaide has also telegraphic communication with the chief towns in the other colonies, except Western Australia, and a line to King George's Sound is spoken of. **Gawler** lies to the north of Adelaide, on the road to Kapunda. **Glenelg** lies to the south-west, on the shores of Holdfast Bay. **Kapunda** and **Kooringa** are famous for their copper mines. **Port Elliot** stands at the seaward entrance of Lake Alexandria; **Port Lincoln** near the southern extremity Eyria Peninsula; *Port Pirie* to the north of York Peninsula. All export considerable quantities of agricultural produce.

ADELAIDE.

Western Australia includes all that portion of the continent which lies west of the meridian of 129°. It embraces an area of 975,000 square miles, but the population does not reach 26,000. The discovery of gold in the eastern colonies attracted a large number of immigrants, but Western Australia has hitherto languished for want of labour. The climate is delightful and healthy. In the south the temperature is similar to that of England, and the central portion is similar to that of Southern Italy. The long droughts felt in the eastern colonies are unknown, and fruits and flowers are abundant. The occupied portion of the colony extends as far north as the De Grey river, but the breadth of fertile land is only about 150 miles; beyond are sandy deserts, with only occasional tracts of fertility. The exports consist of wool, jarrah timber, sandal-wood, copper ore, whale oil, pearls, and pearl shells.

Jarrah timber in grain resembles the best Spanish mahogany, and is hard and durable. It is in great demand for railway sleepers in the other colonies, as it resists the attack of the white ant. The tree is abundant round King George's Sound. Large quantities of *sandal-wood* are exported to China and Singapore; it has an agreeable fragrance, and is much used in cabinet work. The *whale fishery* is carried on along the whole coast; it is chiefly in the hands of the Americans. The *pearl fishery* is becoming an important branch of industry, and pearls of considerable value have been exported.

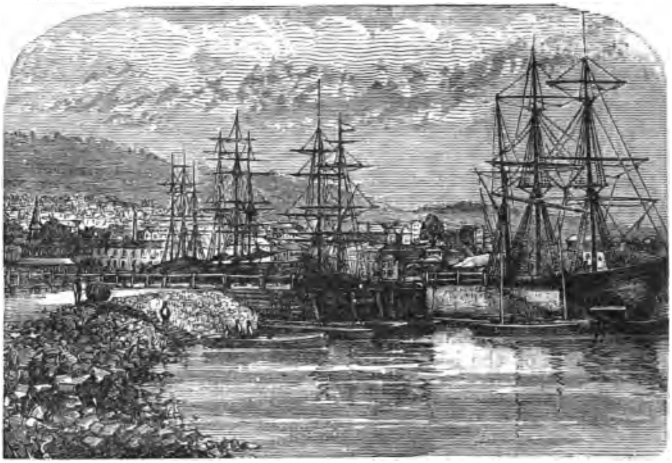
The chief towns in the colony are *Perth*, the capital, which stands on the Swan river, about 8 miles from the sea; *Freemantle*, its port at the mouth of the river; *Geraldton*, on Champion Bay; *Busselton*, on the shore of Geographe Bay; and *Albany*, on King George's Sound.

TASMANIA.

Tasmania, or Van Diemen's Land, is separated from Australia by **Bass Strait**, which is about 120 miles wide. The island is triangular in shape, the base of the triangle stretching in a curve from **Cape Grim** to **Cape Portland**. The total area exceeds 26,000 square miles, and the population in 1873 was 104,000. The interior of the island is mountainous, and the shores bold and rocky. The Dividing Range of Australia is continued through Tasmania in a zigzag direction, running from Cape Portland to South Cape. The culminating point is **Mount Humboldt**, which rises 5520 feet above the sea; and among other summits are Ben Lomond, Cradle Mountain, and Mount Wellington. Towards the centre of the island there is a table-land of considerable extent which rises 3000 feet above the sea-level, and on this plateau are numerous lakes, from which streams flow to the north, south, and west. The principal rivers are the Derwent and Tamar. The **Derwent** rises in *Lake St. Clair*, and flows south-west into Storm Bay. Among its feeders are the Jordan, Clyde, Shannon, Ouse, and Dee. The **Tamar** flows northward into Bass Strait, and its principal feeders are the Avoca and Meander. The climate is cooler and more moist than in Australia, and resembles that of the south of England. It is remarkably healthy. The vegetation and animals resemble those of Australia, but timber is more abundant. Among its minerals are coal, iron, copper, tin, and gold.

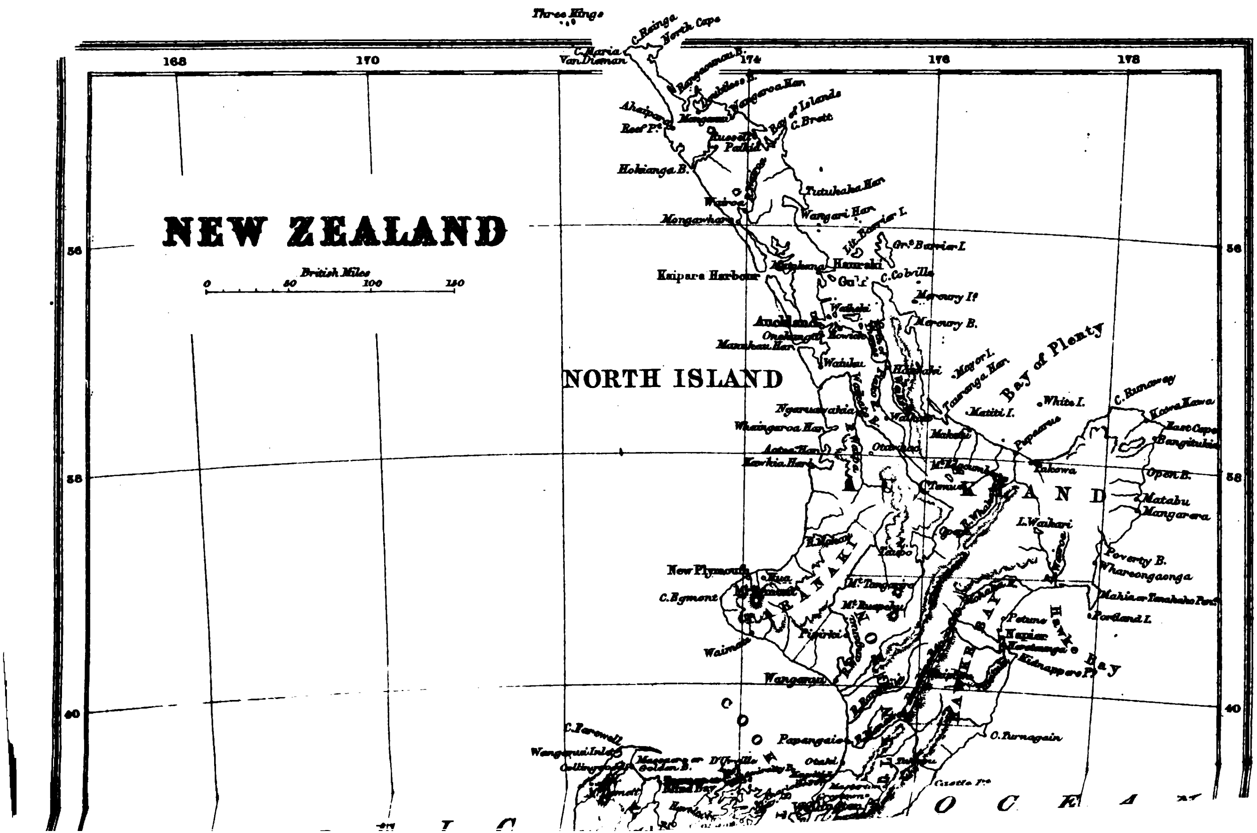
The whole island is more or less auriferous, and recently considerable attention has been paid to *gold* mining. *Coal* and *iron* are pretty generally distributed; *copper* exists in the north-east, and lodes of *tin* are rich and abundant in some parts. The supply of valuable timber is practically inexhaustible, and among the valuable woods are the myrtle, which reaches a height of 200 ft., the huon pine, and the blue gum.

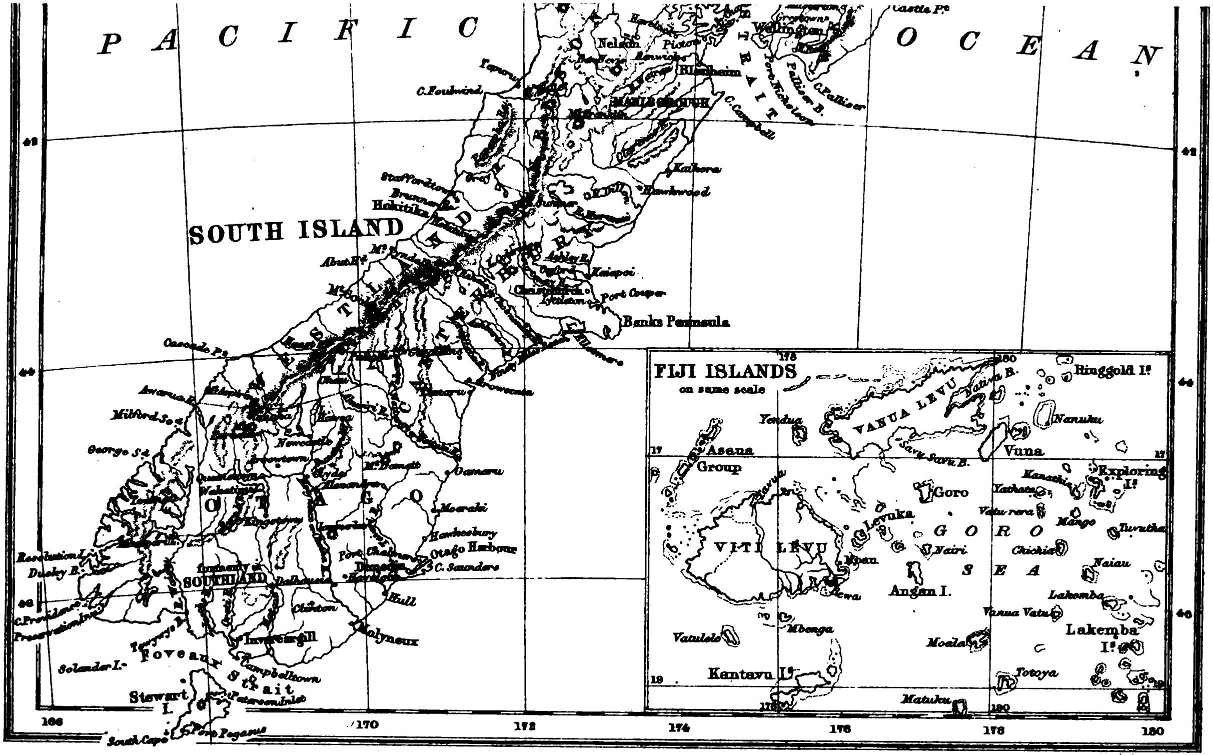
A great portion of the former population were convicts, but transportation to the colony ceased in 1853. The natives are now quite extinct. The chief export from the colony at present is wool, and next to that the produce of the whale fishery. Railways are in course of construction, and the electric telegraph connects Tasmania with Victoria, and thence with England. The constitution is similar to that of the Australian colonies. The chief towns are Hobart Town and Launceston.



HOBART TOWN.

Hobart Town, the capital, is beautifully situated on rising ground about 20 miles from the mouth of the Derwent, which is navigable for ships for 3 miles above the town. Its population exceeds 20,000. **Launceston** stands on the Tamar, about 40 miles from its mouth, and has a population of about 12,000.


NEW ZEALAND
British Miles
0
50
100
150
NORTH ISLAND
Three Kings
C. Maria
Van Dieman
C. Reinga
North Cape
Ahaipara
Reef Pt.
Hokianga B.
Bay of Islands
C. Brett
Tutukaka Har.
Wangari Har.
Mangawhara
Kaipara Harbour
Gr. Barrier I.
Lit. Barrier I.
Hauraki
C. Colville
Mercury Is.
Mercury B.
Auckland
Manukau Har.
Waikato
Mayor I.
Tauranga Har.
Bay of Plenty
White I.
Matiti I.
C. Runaway
East Cape
Whaingaroa Har.
Kawhia Har.
Aotea Har.
Ngaruawahia
Otawhao
Tokowa
L. Waikari
Open B.
Matabu
Mangarara
Poverty B.
Whareongaonga
Portland I.
Napier
Hawke Bay
Kidnappers Pt.
New Plymouth
C. Egmont
Waimate
Wanganui
Papangaio
C. Farewell
Wanganui Inlet
O. Turnagain
168
170
174
176
178
36
38
40


PACIFIC OCEAN
SOUTH ISLAND
Nelson
Picton
Wellington
Blenheim
MARLBOROUGH
C. Foulwind
C. Campbell
C. Palliser
Palliser B.
Port Nicholson
Kaikora
Hawkwood
Stafford
Brunner
Hokitika
Kaiapoi
Christchurch
Lyttelton
Port Cooper
Banks Peninsula
Cascade Pt.
Awarua B.
Milford So.
George S.
Newcastle
Oamaru
Moeraki
Hawkesbury
Otago Harbour
C. Saunders
Port Chalmers
Dunedin
Southland
Hull
Molyneux
Clinton
Invercargill
Campbelltown
Resolution I.
Dusky B.
C. Providence
Preservation Inlet
Solander I.
Foveaux Strait
Stewart I.
Paterson Inlet
South Cape
Port Pegasus
OTAGO
FIJI ISLANDS
on same scale
Ringgold Is.
Nanuku
VANUA LEVU
Natiwa B.
Yendua
Asaua Group
Vuna
Savu Savu B.
Exploring Is.
Kanathia
Goro
Yathata
Vatu-rera
Mango
Tuvutha
Levuka
GORO SEA
Nairi
Chichia
VITI LEVU
Mban
Naiau
Angau I.
Rewa
Lakemba
Vanua Vatu
Lakemba Is.
Mbenga
Vatulele
Moala
Totoya
Kantavu Is.
Matuku
42
44
46
17
19
166
170
172
174
176
178
180

NEW ZEALAND.

THE colony of New Zealand consists of three islands generally known as the Northern, Southern, and Stewart's Island. They are situated between the parallels of 34° 20′ and 47° 20′ south latitude, and about 1200 miles east of Sydney. The entire area is about 106,260 square miles, of which North Island comprises 44,800 square miles; South Island, 60,700; and Stewart's Island, only 760 square miles.

New Zealand lies about as far south of the equator as Italy does to the north of it, and is not unlike it in shape, only inverted. *North Island* is very much indented, and contains Hauraki Gulf, Bay of Plenty, Hawke Bay, Palliser Bay, Manukau Harbour, and Kaipara Harbour. Its chief capes are Cape Maria, North Cape, East Cape, Palliser Cape, and Cape Egmont. It is separated from South Island by **Cook Strait.** *South Island* is more compact in form, the chief inlet being Blind Bay. The south-west coast, however, is rocky and deeply indented, resembling in this respect the coast of Norway. The island is separated from *Stewart's Island* by **Foveaux Strait.**

SURFACE.—In North Island there are several parallel ranges of mountains all running in a direction from north to south. One of these, the Kaimanawa Range contains the volcanic summits of **Tongariro** and **Ruapehu**, the latter rising above 9000 ft. On the west coast is another volcanic summit, **Mount Egmont**, which exceeds 8000 ft. in elevation; its sides clothed with magnificent forests, its summit crowned with snow. On the opposite shore **Mount Edgecombe** towers above the Bay of Plenty. In South Island there is one main chain, the **Southern Alps**, which in **Mount Cook** reaches an elevation of 13,200 ft. The "Alps" throw off various spurs on both sides; in the southern portion they contain numerous lakes, and here also there are magnificent glaciers. The Tasman glacier is 12 miles long and where it terminates has a breadth of nearly 2 miles.

RIVERS.—The chief rivers in North Island are Waikato, Wanganui, and Manawatu. In South Island, the Clutha.

The **Waikato** rises in *Lake Taupo*, a fine sheet of water as large as Lake Geneva. Issuing from the lake it flows for a short distance to the north-east, and then turning abruptly to the north-west, empties itself into a fine harbour after a course of about 250 miles. The **Wanganui** rises to the west of Lake Taupo, and flowing southward empties itself below Petre into Cook Strait. The **Manawatu** rises in the province of Hawke Bay, and after flowing for some distance to the south bursts through the Ruahine Range, and flows into Cook Strait. The streams in the South Island are not of great length, except in the south. The **Clutha**, or Molyneux, drains several lakes, and flowing in a south-east direction discharges its waters into Molyneux Bay.

CLIMATE AND PRODUCTIONS.—The climate of New Zealand is warmer than that of England, and more moist. The climate of South Island has been compared to that of Jersey; of North Island, to that of Montpellier or Milan. Snow is seldom seen in North Island, except on the mountains, and not very often in South Island. Earthquakes are frequent, but the shocks are not generally severe. New Zealand is perhaps the healthiest part of the British Empire, and it is said that the Anglo-Saxon race can work and expose themselves to the climate of New Zealand without injury during more days in the year, and for more hours each day, than in any other country in the world. The colony is celebrated for its *tree ferns* and *pines*. The *kauri* pine, found in the North Island, is much valued for shipbuilding, and kauri gum is an important article of export. Native wild animals are few, song birds are scarce, and there are no venomous reptiles. When the islands were visited by Captain Cook, a kind of wild dog and a few rats were the only animals met with; there are now immense numbers of wild hogs. The domestic animals of Europe have been introduced with great success. The rivers and surrounding seas abound with fish; and seals and whales visit the shores. The chief minerals are gold, silver, coal, iron, copper, lead, and platinum.

PEOPLE AND INDUSTRY.—The islands were discovered by Tasman, and explored by Captain Cook. The first settlement was made in 1814, and for a time it was annexed to New South Wales, but in 1840 it was erected into a separate colony. The present population is about 360,000, of whom about 45,000 are natives.

The natives, called *Maories*, are a fine race of men, and belong to the Malay division of the Mongolians. They are quick in acquiring knowledge, are clever as artizans, and make good farm servants, and steady seamen. They are capable of attaining a higher degree of civilization than either the Aborigines of Australia, or the North American Indians; but like these races they are gradually diminishing in number. They are found chiefly in North Island. The white population are for the most part of English and Scotch descent, and are chiefly engaged in agriculture, sheep-farming and mining. The chief exports are gold, wool, kauri gum, flax, and timber. Considerable quantities of kauri gum are found in a fossil state in both of the larger islands.

PROVINCES.—The general government is administered by a governor, a Legislative Council, and a House of Representatives. *Wellington*, in North Island, is the seat of government. The whole colony is divided into nine provinces, and each province has a superintendent and provincial council. The provinces are Auckland, Taranaki, Hawke Bay, and Wellington, in North Island; and Nelson, Marlboro', Westland, Canterbury, and Otago, in South Island.

Auckland embraces the northern part of North Island. It contains some rich agricultural districts, and valuable forests of the *kauri* or yellow pine. Gold, iron, coal, and copper have been met with in this province. The town of *Auckland*, once the seat of government for the entire colony, stands on an isthmus between Hauraki Gulf and Manukau Harbour, and has a population of 13,000. **Taranaki**, or New Plymouth, lies on the west side of the island, and has been called the "Garden of New Zealand." *New Plymouth*, the capital of the province, lies at the foot of Mount Egmont. **Hawke Bay** lies on the east side of the island. The soil is fertile, and flocks and herds numerous. *Napier* is the capital. **Wellington** comprises the remainder of North Island. The country is hilly and well adapted to sheep pasturage. *Wellington*, the chief town, and the seat of government for the whole colony, stands on the western side of Port Nicholson, and has an excellent harbour. The population is 8000.

Nelson occupies the northern portion of South Island. The land is only moderately fertile, but there is an abundance of minerals, including gold, coal, silver, and copper. *Nelson*, the chief town, stands on the shores of Blind Bay. **Marlborough** lies to the east of Nelson. The surface of the province is diversified, well watered, and contains excellent pastures. The chief town is *Blenheim*, on the river Wairau, which empties itself into Cloudy Bay. **Canterbury** embraces the greater part of the middle portion of the island, being separated from Westland by the Southern Alps. The country rises gradually from the coast to the interior, and contains plains of great fertility. *Christchurch* is the capital; but the chief port is *Lyttelton*, which stands on the shores of Port Victoria. **Westland** extends along the west coast between Napier and Otago. It has risen into importance through its *gold-fields*. The chief town is *Hokitika*. **Otago** occupies the southern portion of the island. The province contains some fine pastoral districts, and in the south-west are large tracts of country densely wooded. Otago is the chief *gold* producing province in New Zealand; the precious metal is obtained from the basin of the Clutha. The chief town is *Dunedin*, at the head of Otago harbour.

Several outlying islands or groups, such as Auckland Island, Chatham Islands, and Norfolk Island are included in the limits of the colony of New Zealand.

The **Auckland** Islands lie about 200 miles to the south of New Zealand. They are covered with vegetation, and a low forest skirts the shores. There are no land quadrupeds except the wild pig, but birds are numerous. The group is often visited by vessels engaged in the southern whale fishery; there is an excellent harbour called *Rendezvous Harbour*.

The **Chatham** Islands lie about 350 miles to the east of New Zealand. The soil is fertile, and excellent potatoes are raised. The harbour of *Waitangi*, on the western side of the principal island, is frequented by whalers.

Norfolk Island lies about 400 miles north of New Zealand. The climate is delightful, the soil fertile, and wheat and maize grow in abundance. The Norfolk pine furnishes valuable timber. The descendants of the mutineers of the *Bounty*, who settled at Pitcairn Island in 1789, were removed to Norfolk Island in 1856 at their own request. Since then some have returned to Pitcairn. It was formerly a penal settlement, and there is still a convict establishment there; but transportation ceased in 1853.

The Fiji Islands.

The Fiji group lies about 1000 miles due north of New Zealand, and within the tropics. There are above 200 islands altogether, and the meridian of 180° passes through the middle of the group. The entire area is estimated at 8000 square miles, and the population is about 150,000. About 80 of the islands are inhabited, the two principal ones being Viti Levu (Great Fiji), and Vauna Levu (Great Land). The chief town is *Levuku*. Kandavu is a calling station for the mail steamers from Australia and New Zealand to Honolulu and San Francisco.

The climate is tropical, but is tempered by the sea breeze, and vegetation is remarkably luxuriant. Among the chief productions are the bread-fruit tree, the banana, the plantain, the cocoa; the sugar cane, arrowroot, and tea plant also thrive. *Cotton* grows wild, but is now becoming an object of cultivation. The inhabitants belong to the Papuan race, but are a fine body of men. Little more than twenty years ago, most of them were cannibals; now the only cannibals found are some hill tribes in Viti Levu. The islands were ceded to Great Britain by the native king in 1874.

OCEANICA.

UNDER the term Oceanica is generally included all the islands belonging to the Pacific. As the East Indian Archipelago and Australasia have been already noticed, we may include the remainder in two divisions, Melanesia and Polynesia.

MELANESIA.

Melanesia comprises New Guinea, New Britain, New Ireland, and the various groups extending thence to New Caledonia; it includes also the Fiji Islands. All these groups are peopled by the *Papuan* race, which resembles the negro type in colour, while the other islands of the Pacific are inhabited by the lighter division of the Malays.

New Guinea, or Papua, as it is sometimes called, ranks next to Borneo among the great islands on the globe; its area is about 270,000 square miles. Very little is known of the interior, as the natives are very hostile to strangers; the longest journey made in this direction was accomplished by a mission party, in 1875, who succeeded in advancing 150 miles up the Fly River. A range of mountains seems to traverse the island from east to west, and one of its summits, in the eastern promontory, attains an elevation of more than 13,000 feet. The island is thickly clothed with vegetation, and among the animals are various marsupials, such as the tree-kangaroo, and the flying opossum. The *cassowary*, which resembles the emu of Australia, and the beautiful birds of Paradise, are natives of New Guinea. The Dutch exercise some influence over the western part of the island; and the Chinese, and other nations of the east, visit the northern coast, whence they obtain tortoise-shell, edible bird-nests, feathers, and other articles.

New Guinea seems inhabited by a number of different tribes, who are constantly at war with each other. For the sake of safety, therefore, the villages are often built in the water, on piles or stakes. In some cases a platform runs from the village to the shore, but in others the distance is too great, and the inhabitants make use of their canoes. When the *Challenger* visited Humboldt Bay, on the north coast, in 1875, the ship was immediately surrounded by about 100 canoes, each containing eight or ten men. These came round the ship, but nothing would induce them to go on board. Some of the *Challenger's* crew landed, but when they attempted to go near a village, the women, and even children, turned out with their bows and arrows, and opposed them. The natives are described as perfectly black, with little or no clothing; whatever was worn was simply for the purpose of ornament.

The **Arru Islands**, a small group immediately west of New Guinea, are the centre of considerable trade. They are visited by traders from the Moluccas, China, Java, and other parts, who obtain birds of Paradise, feathers, and pearl shells in return for cotton cloths, and other necessaries. There is no cultivation on the group, the inhabitants subsisting chiefly on fish. The chief centre of trade is *Dobbo*.

New Britain and *New Ireland* lie to the east of New Guinea. To the south-east are the *Solomon Islands*, and still further to the east are the **Santa Cruz** group. It was at one of these islands (*Nukapu*) that Bishop Paterson was killed (1871). Not long afterwards Commodore Goodenough died of the wounds of poisoned arrows received at *Santa Cruz*, the chief island. *Vanikoro*, another of the group, is interesting from its connection with the fate of the French navigator, La Perouse.

The **New Hebrides**, to the south of the Solomon group, are hilly and well wooded; the chief exports are sandal-wood and cotton. *Aneitum*, one of the islands, contains a population of 22,000, and the inhabitants are described as amiable and intelligent. They have been converted to Christianity, and it is said that nearly all the natives can read and write. In many of the other islands, however, the people are still in a degraded state. This is especially the case with *Espiritu Santo*, the largest of the group. *Erromango*, another of the islands, is interesting in missionary annals, as the scene of the labours and death of the Rev. John Williams.

New Caledonia lies to the south of the New Hebrides. It is about 200 miles in length, and has an area of 6000 square miles. The soil is only of moderate fertility, but the sugar-cane is grown, and there are a few bread-fruit and cocoa-nut trees. The island is a French penal settlement, and there is a garrison of about 1000 soldiers, in order to guard the convicts and keep the natives in check. The natives are of the same race as the aborigines of Australia, and are said to be cannibals. The residence of the French governor is *Port de France;* it is the chief town, but it is only a poor little place.

POLYNESIA.

Under the term Polynesia (many islands) we include the various groups that are scattered over the middle of the Pacific. They lie generally within thirty degrees of the equator, on each side. The inhabitants belong to the brown division of the Malay race, and resemble the Maories of New Zealand. The climate in all cases is tropical, but the heat is tempered by the sea breezes. Vegetation is abundant, and the native fruits include the bread-fruit, plantain, cocoa-nut yam, arrowroot, and sweet potato. Animal life is not very abundant, and, when first discovered by Europeans, the largest animals found in these islands were hogs and wild dogs. The domestic animals of Europe have, however, been introduced. Among native birds may be mentioned the albatross, the tropic bird, various petrels and parroquets, wild ducks, turtle doves, and pigeons. It is remarkable that —if we except the Ladrone Islands—neither toads, frogs, nor snakes of any kind are found in Polynesia. The total number of inhabitants is probably about 500,000. In many islands the natives are still ignorant savages, but during the last half century Christianity and civilization have made great progress.

Almost all the islands of Polynesia are composed either of volcanic rocks or of coral limestone. A vast region extending from Marshall Island south-west to Low Archipelago, and many leagues in breadth, is supposed to mark the site of a submerged continent; and within this space the islands are of coral formation. The Society Islands and the Marquesas, together with some of the Friendly and Navigator's islands, are volcanic, but even these are often fringed with coral reefs. The coral islands are low; the volcanic islands, mountainous.

The chief insular groups north of the equator are the Caroline Islands, the Marshall Islands, and the Sandwich Islands; south of the equator are the Friendly Islands, Navigator's Islands, the Society Islands, Paumota, or Low Archipelago, and the Marquesas group.

The **Caroline** group comprises several hundred islands, a large number of which are atolls, or rings of coral enclosing a salt water lagoon. The inhabitants are reputed to be the most expert sailors and fishermen in Polynesia, and with their canoes carry on a trade with the Ladrones and the eastern Archipelago. They subsist chiefly on fish, as the hog is not found on the islands. The **Marshall** group is composed almost entirely of atolls.

The **Sandwich Islands**, or *Hawaiian* group, lie about 20° north of the equator, and 2800 miles from the coast of Mexico. The islands are ten in number, eight of which are inhabited. The largest island, *Hawaii* or Owhyhee, has an area of 4300 square miles, being more than one-half that of the entire group, and is by far the largest island in Polynesia. On this island rise two volcanic peaks, *Mauna Kea* and *Mauna Loa*, both of which attain an elevation of nearly 14,000 feet. Mauna Loa has two craters, one at the summit, and the other—the famous Kilauea—about 8000 feet below the summit. **Kilauea** is about seven miles in circumference and 1000 feet in depth, and is in a state of constant ebullition. The total population of the islands is about 60,000, of whom about 50,000 are natives, and the rest Americans, Chinese, British, Portuguese, and German settlers. Christianity was introduced about fifty years ago, and there is now a constitutional sovereign, and an Anglican bishop. Schools, newspapers, hotels, boarding-houses, and shops have been established, and there is a regular steam communication with San Francisco.

Honolulu, the capital and the chief seat of trade, stands on the island of Oahu; the population is nearly 15,000. The chief exports are sugar, coffee, rice, hides, corn, with whale and sperm oil. The Sandwich Islands were discovered by Captain Cook in 1788, and he was killed in a collision with the natives of Owhyhee in February 1779.

The **Friendly**, or *Tonga* Islands, lie to the eastward of the Fiji group. The islands are low and encircled with dangerous reefs. The chief island, *Tongatabu*, is about 20 miles long, and encloses a large shallow lagoon. The soil is fertile, and vegetation, especially cocoa-nut palms, very abundant. The population is about 90,000. The women make a very fine cloth called *tapa* from the inner bark of the paper mulberry. There is a native king, and the chief missionary is the Prime Minister. There is considerable trade with the Fiji Islands.

The **Samoa**, or *Navigator's Islands*, lie to the north, and have an area of about 1650 square miles. The group is volcanic, and some of the summits reach the height of 6000 feet. The chief islands are Savaii, Upolu, and Tutuila, and the chief production is cotton. *Apia*, in Upolu, is the centre of trade, which is carried on principally by German and American traders.

The **Society Islands** consist of six larger and seven smaller islands. The principal of these, called *Tahiti* (Otaheite), consists of two lofty peninsulas connected by a low narrow isthmus, and it is surrounded—at a distance varying from half a mile to three miles—by a ring of coral. The soil is fertile, the scenery picturesque, and vegetation extremely abundant. The French influence is predominant here, and the native queen receives a pension from the French government. The chief town is *Papiété*, which possesses a spacious land-locked harbour. The exports consist of pearl shells, sugar, cocoa-nut oil, and arrowroot. Tahiti is interesting as the place where Captain Cook observed the transit of Venus in 1769.

Paumota, or *Low Archipelago*, consists of a number of small islands and groups of no importance, if we except *Pitcairn Island*, which is interesting as being the residence of the mutineers of the *Bounty*. They settled here in 1792, but nothing was heard of them for several years. They had taken wives from Tahiti, and when Captain Beechy touched at the island in 1825, the little colony had increased to 66 persons. In 1855 the colonists, then numbering about 160, were removed at their own request to Norfolk Island.

The **Marquesas Islands**, lying to the north, are a French possession. The islands are lofty and rugged with steep coasts, which prevents the growth of coral. The land is fertile, and coffee, sugar, and cotton, are successfully grown. The inhabitants are superior to most of the Polynesian tribes in personal beauty, but are said to be far below many of them in moral character. The largest island is *Nukahiva.*

INDEX.

Aachen or Aix la Chapelle, 184.
Aar, riv., 168.
Aarau, 172.
Aarhuus, 114.
Abba Jared mt., 297.
Abbotsford, 86.
Aberdeen, 82, 83.
Abyssinia, 312.
Abyssinia, mts. of, 297.
Acapulco, 367.
Achil, isl., 90.
Aconcagua mt., 380, 401.
Adam's peak, 265.
Adam mount, 410.
Adelaide, 424.
Aden, 263, 264.
Adige, riv., 160.
Adowa, 313.
Adrianople, 205.
Adriatic sea, 17.
Afghanistan, 251.
Africa, 295.
Africa, Central, 317.
Africa, Eastern, 319.
Africa, Western, 316.
Agen, 140.
Agincourt, 137.
Agra, 280.
Agram, 199.
Agulhas, cape, 296, 323.
Ailsa Craig, 64.
Airdrie, 79.
Aix, 141.
Aix les Bains, 141.
Ajaccio, 141.
Akaba, gulf of, 226.
Aland, isls., 16
Alaska, 364.
Albany (U.S.), 362.
Albany (Australia), 425.
Albert lake, 312.
Albuera, 148.
Alby, 140.
Alderney, isl., 220.
Aleppo, 260.
Alessandria, 163.
Aleutian, isl., 225, 364.
Alexandria, 309.
Alexandrina, lake, 416.
Algeria, 304.
Algiers, 305.
Algoa bay, 323.
Alicante, 149.
Al-jezireh, 257.
Allahabad, 280.
Allan, bridge of, 85.
Alleghany, mts., 335, 355.
Alloa, 84.
Almanza, 149.
Almeida, 154.
Alnwick, 55.
Alps, mts., 18, 129, 157, 167.
Alps, Australian, 413.
Alps, Southern, N.Z., 427.
Alsace-Lorraine, 190.
Altai, mts., 227, 234.
Altona, 185.
Altorf, 173.
Amazon, 382.
Amboyna, isl., 294.
America, North, 332.
America, British N., 340.
America, Central, 368.
America, South, 377.
Amirante, isls., 330.
Amoo or Oxus, riv., 227, 250.
Amoor, riv., 227, 234.
Amoy, 241.
Amritsir, 281.
Amsterdam, 120.
Anam, 290.
Ancona, 164.
Andaman isls., 267.
Andes, 380.
Andes, Peruvian, 395.
Andes, Bolivian, 396.
Andorra, 149.
Anglesey, isl., 30, 63.
Angora, 259.
Angostura, 388.
Ankobar, 313.
Annan, riv., 74.
Anticosti, isl., 240.
Antigua, isl., 375.
Antilles, 371.
Antilles, Lesser, 374.
Antisana, mt., 380.
Antonguil bay, 331.
Antrim, county, 102.
Antrim, mts. of, 91.
Antwerp, 126.
Apennines, the, 18, 157.
Appalachian mts., 335, 355.
Arabia, 262.
Aral, sea of, 228.
Ararat, mt., 231, 256.
Aravulli mts., 267.
Archangel, 218.
Archangel, gulf, 211.
Archipelago, the, 17.
Ardnamurchan point, 66.
Ardrossan, 86.
Arequipa, 396, 398.
Argentine Republic, 404.
Argyle, 64.
Arica, 398.
Arklow, 103
Arles, 141.
Armagh, 102.
Arno, riv., 21, 160.
Arran Fowddy, 32.
Arran, isl. (Scotland), 64.
Arran, isls. (Ireland), 90.
Arranmore, 90.
Arras, 137.
Arru isles, 432.
Arta, gulf, 200.
Arthur's Seat, 70.
Arun, river, 38.
Ascension, isl., 329.
Ashantee, 316.
Asia, 224.
Aspinwall, 387.
Assam, 282.
Assouan, 310.
Asti, 163.
Astrakhan, 219.
Asuncion, 408.
Atacama, desert, 379.
Athabasca, lake, 343.
Athens, 209.
Athlone, 102.
Atlas, mts., 297.
Auckland (N.Z.), 429.
Auckland Isles, 429.
Augsburg, 187.
Australasia, 411.
Australia, 411.
Australia, South, 423.
Australia, West, 424.
Australian Bight, 412.
Austro-Hungarian E. 192.
Auvergne, mts. of, 19, 129.
Avignon, 141.
Avlona, *see* Valona.
Avon, riv. (England), 38.
Awe, Loch, 69, 75.
Ayr, 85.
Ayr, riv., 75.
Azores, isls., 155.
Azov, sea of, 18, 211, 212.

B.

Bab-el-mandeb straits, 224.
Baba, cape, 224.
Badajos, 148.
Baden, town, 172.
Baden, Grand Duchy, 189.
Baden-Baden, 189.
Baffin's bay, 333.
Bagamoyo, 319.

Bagdad, 260.
Bahama isles, 373.
Bahia, or San Salvador, 394.
Bahrein, isl., 225.
Baikal, lake, 228.
Bakhtegan lake, 253.
Bakony Forest, 193.
Baku, 231.
Bala, lake, 40.
Balaton, lake, 194.
Balearic isles, 17, 150.
Balkan, mts., 18, 20, 201.
Balkh, 252.
Ballarat, 423.
Ballinasloe, 104.
Baltic sea, 16, 211.
Bamian, 252.
Banbury, 60.
Banca, isl., 294.
Bandon, riv., 93, 95.
Banff, 83.
Bangalore, 283.
Bangor, 63.
Bann, riv., 93, 94.
Bannockburn, 80, 85.
Bantry bay, 89.
Barbadoes, isl., 375.
Barbary states, 303.
Barbuda, isl., 375.
Barcelona, 149.
Bardsey, isl., 30.
Bari, 165.
Barnaul, 235.
Barnet, 60.
Barra, isl., 67.
Barrow, riv., 93, 94.
Barrow-in-Furness, 45.
Basle, 172.
Basra, 260.
Bass Rock, 68.
Bassenthwaite, lake, 39, 40.
Bastia, 141.
Basutoland, 322.
Bath, 62.
Bathgate, 79.
Bathurst, (Africa), 320.
Bathurst cape, 341.
Bathurst (Canada), 349.
Bathurst (Australia), 421.
Battle, 62.
Battock mt., 69.
Bautzen, 186.
Bavaria, 187.
Bayeux, 137.
Bayonne, 140.
Beachy Head, 27.
Beauley, loch, 67.
Bedford, 58, 59, 60.
Behring's straits, 224.
Belfast, 100, 101.
Belfort, 139.
Belgium, 122.
Belgrade, 206.
Bell Rock, 68.
Belle Isle, straits of, 340.
Bellot straits, 341.
Beloochistan, 252.
Belturbet, 102.
Ben Attow, 69.
Ben Avon, 69.
Ben Cruachan, 69.
Ben Dearg, 69.
Ben Lawers, 69.
Ben Lomond, 69.
Ben Macdhui, 69.
Ben More, 69.
Ben Nevis, 69.
Ben Wyvis, 69.
Benares, 280.
Benbecula, isl., 67.
Bengal, 279.
Bengore Head, 88.
Benguela, 317.
Benin, Bight of, 296.
Berar, 283.
Berbera, 311.
Berbice, riv., 389.
Berezov, 235.
Bergen, 110, 111.
Berkshire, 61.
Berlin, 183.
Bermudas, isl., 375.
Berne, 172.
Berwick, county, 85.
Berwick-on-Tweed, 85.
Berwyn range, 32.
Besançon, 139.
Beypoor, 282.
Beyrout, 260.
Bhotan, 285.
Biafra, bight of, 296.
Bideford bay, 30.
Bielukha, mt., 227.
Bienne, lake, 169.
Bigorre, bagnères de, 140.
Bilbao, 148.
Bilston, 48.
Birmingham, 48.
Biscay, bay of, 17.
Bissao, 316.
Black sea, 18, 201, 211.
Black Larg, mt., 70.
Black Forest, mts., 33.
Black, riv., 373.
Blackburn, 47.
Blacksod bay, 90.
Blackwater, riv., 93, 95.
Blagoveschensk, 235.
Blanco, cape, 296.
Blois, 137.
Blue mts. (Africa), 297.
Blue mts. (N. America), 355.
Blue mts. (Jamaica), 373.
Blue mts. (Australia), 413.
Bohemia, 198.
Bohmer Wald, 175.
Bokhara, 250.
Bokkeveldt, mts., 323.
Bolan pass, 252
Bolivia, 398.
Bologna, 164.
Bolsena, lake, 160.
Bolton, 47.
Bombay, 281.
Bon, cape, 296.
Bonifacio, strait of, 17.
Bonn, 185.
Boothia, gulf of, 341.
Bordeaux, 140.
Borneo, isl., 225, 293.
Bornholm, isl., 115.
Bosna Serai, 206.
Bothnia, gulf of, 16, 211.
Bosphorus, *see* Strait of Constantinople.
Boston, 362.
Bosworth, 60.
Botton Head, 32.
Botzen, 198.
Boyana, riv., 202.
Boyne, riv., 93, 94.
Bracciano, lake, 164.
Bradford, 47.
Braga, 154.
Braganza, 151.
Brahmapootra, riv., 227, 245, 270.
Branco, cape, 377, 378.
Brandon, mt., 92.
Brazil, 392.
Brecknock, 63.
Brecknock Beacon, 33.
Breda, 121.
Breede, riv., 325.
Bremen, 191.
Bremerhafen, 191.
Brentford, 60.
Brescia, 164.
Breslau, 182.
Brest, 137.
Briançon, 141.
Bridlington bay, 26.
Brienz, lake, 169.
Brighton, 64.
Brindisi, 165.
Brisbane, 420.
Bristol, 52, 60.
Bristol Channel, 30.
British Isls., 25.
Broadhaven, 90.
Brooklyn, 362.
Broom, loch, 67.
Brown, mt., 334, 341
Brown Willy, 34.
Bruges, 126.
Brunn, 199.
Brussels, 126.
Buchan Ness, 68.
Buchan, Bullers of, 68.
Bucharest, 206.
Buckingham, 58, 59.
Buda-Pesth, 199.
Budweis, 198.
Buenos Ayres, 407.
Buffalo, 362.
Bundemir, riv., 253.
Burdwan, 280.
Burgos, 149.

Burmah, 291.
Burmah, British, 282.
Burrow Head, 64.
Burslem, 48.
Burton-on-Trent, 60.
Bury St. Edmunds, 57.
Bushire, 255.
Busselton, 425.
Bute, 84.
Bute, isl., 64.
Buttermere, 39, 40.
Buxton, 60.
Byron, cape, 411.

C.

Cabul, 252.
Cabul, riv., 251.
Cader Idris, 32.
Cadiz, 148.
Cagliari, 166.
Cairngorm, 69.
Cairnsmuir, mt., 70.
Cairn Toul, 69.
Cairo, 309.
Caithness, 82.
Calais, 137.
Calcutta, 280.
Calmar, 110, 112.
Cambay, gulf of, 266.
Cambrian mts., 32.
Cambridge, 56.
Cambridge (America), 362.
Cambodia, 291.
Cambodia point, 225.
Cameroon, peak of, 297.
Campanella point, 156.
Campeachy, 367.
Campsie hills, 70.
Canada, 340.
Canary isles, 150, 296.
Candahar, 252.
Candia isle, 17, 207.
Canobolas, mt., 414.
Canso, cape, 340.
Canterbury, 61.
Canterbury (N.Z.), 429.
Cantire, Mull of, 65.
Canton, 241.
Cape Breton isle, 348.
Cape Breton Colony, 327.
Cape Breton Town, 328.
Cape Verde isls., 296.
Capri, isle of, 156.
Caracas, 388.
Caracas, Silla de, 380.
Cardiff, 54.
Cardigan, 63.
Cardigan bay, 30.
Caribbean sea, 333.
Carlingford lough, 88.
Carlow, 102.
Carlsbad, 198.
Carlscrona, 110, 111.
Carlsruhe, 189.
Carmarthen, 63.
Carmel, mt., 261.
Carnarvon, 63.
Carnsore point, 89.
Carntogher, mts., 91.
Caroline group, 433.
Carpathian mts., 18.
Carpentaria gulf, 413.
Carran Tual, 92.
Carrara, 164.
Cartagena, 149.
Cartagena(N.Granada),387
Cascade mts., 342.
Cashel, 103.
Cashgar, 249.
Cashmere, 284.
Caskets, 220.
Caspian sea, 228.
Cassari, 166.
Castlemaine, 423.
Catania, 166.
Cattegat, 16.
Caucasia, 231.
Caucasus, mts., 19, 212.
Caucasus, gates of, 19
Cauvery, riv., 271.
Cavan, 102.
Cawnpore, 280.
Cawsand Beacon, 34.
Caxamarca, 398.
Cayambe, mt., 380.
Cayenne, 390.
Cayman Brack, 374.
Cayman, Grand, 374.
Cayman, Little, 374.
Celebes, isl., 294.
Celtiberian mts., 143.
Central Provinces, 282.
Cephalonia, isl., 210.
Cerigo, isl., 210.
Cetigne, 207.
Cette, 141.
Cevennes, mts., 129.
Ceylon, isl., 264.
Chalons-sur-Marne, 138.
Chalons-sur-Saône, 139.
Chapala, lake, 365.
Charleroi, 126.
Charles, cape, 332, 340, 354.
Charleston, 363.
Chatham, 61.
Chatham isles, 430.
Chaudière falls, 345.
Chee-Foo, 242.
Chelmer, riv., 37.
Cheltenham, 60.
Chemnitz, 186.
Chenaub, riv., 271.
Chesapeake bay, 354.
Cheshire, 57.
Chesil Bank, 29.
Chester, 58.
Chicago, 363
Chichester, 62.
Chili, 401.
Chilka lagoon, 266.
Chiltern hills, 35.
Chimborazo, mt., 380.
China, 236.
China Sea, 225.
Chincha isles, 369.
Choo-kiang, riv., 237.
Christiania, 110, 111.
Chudleigh, cape, 340.
Chuquibamba, mt., 396.
Chuquisaca, 400.
Chur, 173.
Chusan Isle, 236.
Cincinnati, 363
Cirencester, 60.
Citta Vecchia, 222.
Ciudad Real, 150.
Ciudad Rodrigo, 148.
Clackmannan, 84.
Clare, county, 103.
Clare, isl., 90.
Clear, cape, 89.
Clee hills, 33.
Clermont Ferrand, 139.
Clew bay, 90.
Clonmel, 103.
Clwyd, riv., 39.
Clyde, Frith of, 64.
Clyde, riv., 74.
Coalbrookdale, 58.
Coatbridge, 79.
Coblentz, 184.
Coburg, 191.
Cochabamba, 401.
Cod, cape, 353.
Cognac, 139.
Coimbra, 154.
Colchester, 57.
Coleroon, riv., 271.
Colima, mt., 365.
Colmar, 190.
Colne, riv., 37.
Cologne, 184.
Colonia, 409.
Colorado, riv., 358.
Columbia, 386.
Columbia, cape, 333.
Columbia, riv., 357.
Columbia, British, 351.
Comino isle, 223.
Como, lake, 159.
Comorin, cape, 266.
Comoro, isls., 296.
Compass, mt., 324.
Compiègne, 138.
Conception, 403.
Congo, riv., 299.
Coniston, lake, 39.
Conn, lough, 95.
Connaught, 104.
Connemara, mts., 91.
Constance, 189.
Constance, lake, 168.
Constantinople, 205.
Constantinople, straits, 17.
Contessa, gulf, 200.
Conway, 63.
Conway, riv., 39.

Cook's strait, 427.
Cook's mt., 427.
Coomassie, 316.
Copenhagen, 114.
Copiapo, 403.
Coquimbo, 403.
Cordillera Grande, 381.
Cordova, 149.
Cordova (S. America), 407.
Corea, 225, 242.
Corfu, 210.
Corinth, 210.
Cork, 100, 101, 103.
Cork harbour, 89.
Corner Inlet, 411.
Cornwall, 61.
Coronation, gulf, 341.
Corrib, lough, 95.
Corrientes, 407.
Corrientes, cape, 296.
Corsica, 17, 141.
Corsill point, 64.
Corunna, 148.
Cosseir, 310.
Costa Rica, 370.
Cotopaxi, mt., 380.
Courtray, 126.
Cracow, 199.
Crecy, 137.
Cremona, 163.
Creux, cape, 17, 142.
Crimea, 18, 212.
Croagh Patrick, 91.
Cromarty, 83.
Cromarty firth, 67.
Cromer, 57.
Cross Fell, 31.
Crummock Water, 39, 40.
Cuba, isl., 371.
Culloden Moor, 83.
Cumana, 388.
Cumberland, 54, 55.
Cumberland mts., 355.
Cumbrae isles, 64.
Cumbrian mts., 32.
Cuzco, 398.
Cyprus, 256.
Czernowitz, 199.

D.

Dago, isl., 211.
Dahomey, 317.
Dal, riv., 21, 108.
Damascus, 260.
Damietta, 310.
Dampier archipelago, 412.
Danger point, 411.
Dantzic, 182.
Danube, riv., 21, 176, 194, 202
Dardanelles, straits, 17, 201.
Darfur, 311.
Dariel, pass, 19.
Darien, gulf, 377.
Darjeeling, 271.
Darling range, 414.
Darmstadt, 191.
Dart, riv., 38.
Dartmoor, 34.
Dean Forest, 41.
Dease, strait, 341.
Debra Tabor, 313.
Debreczin, 199.
Dee, riv. (England), 39.
Dee, riv. (Scotland), 72, 74.
Delgado, cape, 296.
Delhi, 281.
Demerara, riv., 389.
Denbigh, 63.
Denmark, 16, 113.
Derby, 58.
Derwentwater, lake, 39, 40.
Derwentwater, riv., 425.
Despoto Dagh, 201.
Devon, 61.
Devonian chain, 33.
Dhawalagiri, mt., 268.
Dihong, *see* BRAHMAPOOTRA
Dijon, 139.
Dinaric Alps, 201.
Dingle, 104.
Dingle bay, 90.
Dirk Hartog isl., 412.
Diu, isl., 266.
Dividing range, 413.
Dneiper, riv., 21, 213.
Dneister, riv., 21, 213.
Dodabetta, mt., 268.
Dollart Zee, 174.
Dominica, isl., 375.
Don, riv. (England), 21.
Don, riv. (Scotland), 71.
Don, riv. (Russia), 213.
Donegal, 102.
Donegal bay, 90.
Donegal mts., 91.
Doon, riv., 74.
Dornoch firth, 67.
Dorset, 61.
Dorset heights, 35.
Douro, riv., 21, 144, 152.
Dover, 61.
Dover, straits of, 16.
Doveran, riv., 71.
Dovey, riv., 39.
Dovrefeld, mts., 107.
Down, 102.
Downpatrick, 102.
Downs, The, 27.
Drachenfels, 180
Drepano, cape, 200.
Dresden, 186.
Drin, riv., 202.
Drino, gulf, 200
Drogheda, 100, 101, 102.
Dryburgh abbey, 86.
Dublin, 100, 102.
Dublin bay, 88.
Dudley, 48.
Dumbarton, 84, 85.
Dumfries, 82, 84, 85, 86.
Dunbar, 85.
Dunblane, 85.
Duncansbay head, 67.
Dundalk, 100, 101.
Dundalk bay, 88.
Dundee, 80.
Dundrum bay, 88.
Dunfermline, 80.
Dungannon, 102.
Dungarvan, 103.
Dungarvan bay, 89.
Dungeness, 87.
Dunkeld, 84.
Dunkerry beacon, 34.
Dunkirk, 137.
Dunmore head, 90.
Dunoon, 85.
Dunstable, 49, 60.
Durham, 54.
Dwina, 21, 213.

E.

Earn, loch, 73.
Earn, riv., 73.
East Anglian Heights, 22, 35.
East Cape, 224.
East Indian Archipelago, 292.
Ebal, mt., 261.
Ebro, riv., 21, 144.
Ecuador, 385.
Eddystone lighthouse, 29.
Eden, riv., 36.
Edgecombe, mt., 427.
Edinburgh, 85.
Egina, gulf, 210.
Egmont, mt., 427.
Egripo, 210.
Egypt, 306.
Eifelgebirge, 180.
Eisleben, 184.
Ekaterinburg, 235.
Elba, isl., 156.
Elbe, riv., 21, 176.
Elburz, pk of, 19.
Elburz, mts., 253.
Elderslie, 86.
Elgin or Moray, 83.
Elias, mt., 335.
Elizabetopol, 231.
El-Juff, 314.
Ellora, 284.
Elsinore, 114.
Eltonsk, 21.
Elvas, 155.
Ely, 56.
Emineh, cape, 201.
Ems, 185.
Enara, lake, 213.
Encounter bay, 412.
England, 25.
Ennerdale, lake, 39.
Enniskillen, 102.
Epsom, 62.
Epynt hills, 32.
Erfurt, 183.
Erie, lake, 344.

Erivan, 231.
Erne, riv., 73.
Errigal, mt., 91.
Errishead, 90.
Erz-gebirge, 19, 20, 175.
Erzeroum, 260.
Esk, riv., North, 71.
Esk, riv., South, 71.
Espichel, cape, 151.
Essequibo, riv., 389.
Essex, 56.
Eszek, 199.
Eton, 62.
Euphrates, riv., 227, 257.
Everest, mt., 227, 268.
Evesham, 60.
Exe, riv., 38.
Exeter, 62.
Exmoor, 33.
Eyre, lake, 416.

F.

Fair head, 88.
Fairweather, mt., 335,364.
Falkirk, 85.
Falkland isles, 410.
Falmouth harbour, 29.
False bay, 323.
Faroe isles, 115.
Fermanagh, 10.
Fern isl., 262.
Fernando Po, 296.
Ferrara, 164.
Ferrol, 148.
Fersala, 206.
Fez, 304.
Fichtel Gebirge, 175.
Fife, 84.
Fifeness, 68.
Fiji isls., 430.
Findhorn, riv., 71.
Fingal's cave, 66.
Finisterre, cape, 17, 142.
Finland, 217.
Finland, gulf, 16, 211.
Finnan, 81.
Finster Aarhorn, 167.
Fiume, 199.
Flamborough head, 26
Flattery, cape, 354.
Flinders range, 414.
Flint, 63.
Flodden, 55.
Florence, 164.
Fontainebleau, 138.
Foo-Choo, 241.
Forest Fawr, mts., 33.
Forez, mt., 129.
Forfar or Angus, 84.
Formby point, 31.
Formosa, isl., 236.
Formosa, cape, 296.
Foreness point, 27.
Fort George, 83.
Fort Louis, 316.
Fort Viernoie, 232.
Forth, firth of, 68.
Forth, riv., 73.
Fotheringay, 60.
Foula, isl., 67.
Foveaux strait, 427.
Fox channel, 341.
Foyle, riv., 93.
Foyle, lough, 94.
France, 128.
Frankfort-on-the-Main,185
Frankfort-on-the-Oder,183
Franklin strait, 341.
Fraser, riv., 343.
Fray Bentos, 409.
Fredericton, 349.
Freemantle, 425.
Freiberg, 186.
Fremont's peak, 334, 355.
Freshwater bay, 28.
Fribourg, 171.
Friendly isles, 435
Frio, cape, 378.
Frische Haff, 174.
Frobisher bay, 340.
Frome, riv., 38.
Froward, cape, 377.
Fundy, bay, 340.
Funen, isl., 113.
Fusi-yama, mt., 246.
Fury straits, 341.
Fyne, loch, 65.

G.

Gaeta, city and bay, 165.
Galashiels, 80.
Galatz, 206.
Galilee, sea of, 261.
Gallinas, cape, 377.
Gallipoli, 206.
Galloway, mull of, 64.
Galtee mts., 91.
Galway, 100, 101, 104.
Galway bay, 90.
Gambia, riv., 320.
Gamtoos, riv., 325.
Ganges, riv., 227, 270.
Garda, lake, 160, 194.
Gargano point, 156.
Gargano, mt., 157.
Garonne, riv., 21, 130.
Gartokh, 245.
Gata, cape, 143.
Gauritz, riv., 325.
Gawler range, 414.
Gawler, town, 424.
Gaza, 261.
Geelong, 423.
Gefle, 110, 112.
Geneva, 171.
Genoa, 163.
Genoa, gulf, 17.
George Town, 390.
Gerizim, mt., 261.
German Empire, 174.
Ghent, 126.
Ghiznee, 252.
Giant's Causeway, 87.
Gibraltar, 17, 221.
Gibraltar strait, 17.
Gibraltar rock, 142.
Gilboa, mt., 261.
Gironde, 130.
Glamorgan, 63.
Glamorgan mts., 33.
Glasgow, 82.
Glass, riv., 71.
Glenelg, 424.
Glenmore, 68.
Glommen, riv., 21, 108.
Glossa, cape, 200.
Gloucester, 54, 58, 59, 60.
Goat Fell, 65.
Gobi, desert, 244.
Godavery, riv., 271.
Golconda, 284.
Gold Coast Colony 321.
Golden Gate, 351.
Gombroon, 255.
Gondar, 313.
Good Hope, cape, 296, 323.
Goodwin Sands, 27.
Gota, riv., 108.
Gothland, isl., 16, 107.
Gottenburg, 110, 111.
Gottingen, 185.
Goulburn, 421.
Gozo, isl., 223.
Graham's Town, 328.
Grampians, mts., 69.
Grampians (Australia),414
Granada, 149.
Gratz, 197.
Great Bear lake, 343.
Great Barrier Reef, 411.
Great Belt, 16.
Great Fish riv., 325.
Great Kai, riv., 325.
Great Ormes head, 30.
Great Salt Lake, 336.
Great Salt Lake Valley,355.
Green mts., 355.
Greenland, 337.
Greenlaw, 85.
Greenock, 82, 86.
Greenwich, 61.
Grenada, isl., 375.
Grenoble, 141.
Grim, cape, 425.
Griquland, West, 329.
Grisnez, cape, 128.
Gross Glockner, 193.
Guadalaviar, riv., 144.
Guadalaxara, 367.
Guadalquiver, riv., 21,144.
Guadiana, riv., 21, 144,152.
Guanaxuato, 367.
Guardafui, cape, 296.
Guatemala, 368.
Guayaquil, 385.
Guaymas, 367.

Guernsey, 220.
Guiana, 389.
Guiana, British, 389.
Guiana, Dutch, 390.
Guiana, French, 390.
Guinea, Upper, 316.
Guinea, Lower, 317.
Guingamp, 137.
Guiona, mt., 208.
Gulf Stream, 333.

H.

Haarlem, 120.
Haarlem Meer, 117.
Haddington, 85.
Haël, 263.
Hague, The, 120.
Hainan, isl., 236.
Hakodadi, 248.
Hala, mts., 268.
Halifax, 47.
Halifax (Nova Scotia), 348.
Halle, 183.
Hamadan, 255.
Hamburg, 191.
Hamilton, 350.
Hammerfest, 110, 111.
Hampshire, 60, 61.
Handeck falls, 169.
Hang-Chow, 241
Hankow, 242.
Hanley, 48.
Hanover, 185.
Hardangerfield mts., 107.
Harlech, 63.
Harris, isl., 67.
Harrow, 60.
Hart-Fell, 70.
Hartland point, 30.
Hartlepool, 53.
Harz mts., 19, 20, 175.
Hastings, 62.
Hatteras, cape, 350.
Havre, 137.
Hawaii or Owhyhee isl., 434
Hawes water, 39.
Hawick, 80.
Hawke's bay, 429.
Hayti or St. Domingo, 371.
Hebron, mt., 261.
Hecla, mt., 115.
Hecla straits, 341.
Heidelberg, 189.
Heligoland, isl., 221.
Hell-Gate, 353.
Hellespont, *see* DARDANELLES.
Helmund, riv., 227, 251.
Helsingfors, 218.
Helvellyn, mt., 32.
Henley, 60.
Herat, 252.
Herefordshire, 57.
Hermon, mt., 256.
Hermopolis, 210.
Herschell range, 414.
Hertford, 58, 60.
Hervey bay, 114.
Hexham, 53.
Himalayas, mts., 227, 267, [268.
Hindoo-Koosh mts., 227.
Hindostan, 265.
Hoang-Ho, riv., 227, 237.
Hobart Town, 426.
Holland or Netherlands, [116.
Holy isl., 34.
Holywell, 63.
Homburg, 185.
Honduras, 369, 376.
Hong-Kong, isl., 236, 237.
Honolulu, 435.
Hooker, mt., 334, 341.
Hoorn, 120.
Horn, cape, 377.
Howe, cape, 411.
Howth Head, 88.
Hoy, isl., 67.
Huddersfield, 47.
Hudson bay, 340.
Hudson strait, 340.
Hull, 52.
Humber, riv., 37.
Humboldt mts., 355.
Humboldt (Tasmania), 425.
Hunstanton Cliff, 26.
Huntingdon, 58, 59, 60
Hurdwar, 280.
Huron, lake, 344.
Hyderabad, 284.
Hydra, 210.

I.

Iceland, 115.
Ill, riv., 190.
Illimani, mt., 380.
Ilmen, lake, 213, 214.
India, 265.
Indian Territory, 364.
Indies, West, 370.
Indies, British West, 371.
Indo-Chinese pen., 287.
Indus, riv., 227, 245, 270.
Ingleborough, 31.
Inkpen beacon, 34.
Innsbruck, 198.
Interlaken, 172.
Inverleithen, 86.
Inverness, 83.
Iona, isl., 65.
Ionian isls., 210.
Ipsamboul, 311.
Ipswich, 57.
Ipswich (Australia), 420.
Iquique, 398.
Irak-Arabi, 257.
Ireland, 87.
Irkutsk, 235.
Irrawady, 227, 287.
Irvine, 86.
Ischia, isl., 156.
Islay, isl., 65.
Ismail, 206.
Ismailia, 310.
Ispahan, 255.
Italy, 156.
Itambe, mt., 381.
Itasca, lake, 356.
Ithaca, isl., 210.

J.

Jahde, gulf of, 174.
Jalapa, 367.
Jamaica, isl., 373.
Jamoo, 284.
Janina, 206.
Janina, lake, 202.
Japan, 246.
Japan, sea of, 225.
Jassy, 206.
Java, isl., 294.
Jena, 191.
Jersey, 220.
Jerusalem, 261.
Jhelum, riv., 271.
Jiddah, 261.
Joppa, 261.
Jordan, riv., 227, 257, 261.
Jorullo, mt., 365.
Juan de Fuca, strait, 341.
Juan Fernandez, isl., 379
Julianshaab, 339.
Jungfrau, mt., 167.
Jura, isl., 65.
Jura, mt., 18, 167.
Jura, sound, 65.
Jutland, isl., 115.

K.

Kabes, gulf, 296.
Kagosima, 248.
Kalagria, cape, 201.
Kalahari desert, 293.
Kalu pass, 252.
Kamloops, lake, 343.
Kamtschatka, 225.
Kamtschatka, sea of, 225.
Kanagawa, 248.
Kandalaksha, gulf, 211.
Kangaroo, isl., 412.
Kano, 315.
Kapunda, 424.
Kara, sea of, 16.
Karakorum, 244.
Karakorum mts., 268.
Karree Berge, 323.
Kars, 260.
Kasan, 219.
Kaseh, 318.
Kattiwar, pen., 266.
Keeper, mt., 92.
Kelat, 252.
Kelso, 85.
Kenia, mt., 297.
Kenmare, riv., 90.

Kenneh, 310.
Kent, 60, 61.
Kerkhah, 253.
Kerman, 255.
Kerman, desert of, 253.
Kerry, 103.
Kerry head, 90.
Keswick, 56.
Kharkov, 218.
Khartoum, 311.
Khasia mts., 268.
Khatmandoo, 285.
Kherson, 219.
Khimera mts., 202.
Khiva, 250.
Khokan, 250.
Khurdistan, 257.
Kiel, 185.
Kiev, 218.
Kilauea, mt., 434.
Kildare, 102.
Kilimanjaro, 297.
Kilkenny, 102, 103.
Killarney, lakes, 95.
Kilmarnock, 80.
Kincardine, 84.
King George's Sound, 412.
King William's Land, 333, [341.
King's County, 102.
King-ki-tao, 242.
Kingston (Surrey), 62.
Kingston (Canada), 351.
Kingston (Jamaica), 374.
Kinnaird's head, 68.
Kinross, 84.
Kinsale, 104.
Kinsale harbour, 89.
Kin-te-ching, 242.
Kiolen, 107.
Kioto (*Miako*), 248.
Kirin, 243.
Kirkcaldy, 84.
Kirkcudbright, 85.
Kishon, riv., 261.
Kistna, riv., 271.
Kiusiu, isl., 246.
Kizil Irmak, riv., 257
Klagenfurt, 197.
Klar, riv., 108.
Klausenburg, 199.
Knockmeledown mts., 91.
Koko-nor, lake, 244.
Kolyvan, 235.
Kong, mts., 297.
Konigsberg, 182.
Kooringa, 424.
Kosciusko, mt., 413.
Kouban, riv., 213.
Kouka, 315.
Kowloon, 287.
Kraw, isthmus of, 267.
Kronstadt, 199, 211.
Kuen-lun mts., 227.
Kunchin-jinga, mt., 268.
Kur, riv., 231.
Kuran, riv., 253.
Kurile isles, 225, 249.
Kurische Haff, 174, 211.
Kurrachee, 281.
Kutaya, 259.
Kymoor hills, 268.

L.

La Hague, cape, 17, 128.
La Hogue, 137.
La Paz, 401.
La Rochelle, 139.
Laaland, isl., 113.
Labuan, 287.
Laccadive, isles., 266.
Ladoga, lake, 22, 213, 214.
Lagos isle, 321.
Lahore, 280.
Lammermuir hills, 70.
Lanark, 85, 86.
Lancashire, 54, 55.
Lands End, 30.
Lange Berge, 323.
Largs, 86.
Lassa, 245.
Lauenburg, 185.
Laurentian chain, 342.
Lausanne, 171.
Laybach, riv. and tn., 197.
Leamington, 60.
Lebanon, mt., 256.
Lee, riv., 93, 95.
Leeds, 47.
Leeward isles, 375.
Leghorn, 164.
Leicester, 58, 59.
Leighton Buzzard, 60.
Leinster, 102.
Leipsic, 186.
Leith, 82, 85.
Leith Hill, 35.
Leitrim, 104.
Lema isles, 287.
Lemberg, 199.
Lena, riv., 227, 234.
Leon, 370.
Leontes, riv., 257.
Lepanto, 210.
Lepanto gulf, 210.
Lessöevark, lake, 108.
Leuca, Cape di, 156
Leven, loch, 76.
Leveque, cape, 412.
Lewes, 62.
Lewis, isl., 67.
Leyden, 120.
Liberia, 316.
Lichfield, 60.
Lichtenstein, 191,
Liege, 126.
Liegnitz, 183.
Liffey, riv., 93, 94.
Lifford, 102.
Lille, 137.
Lima, 397.
Limerick, 100, 101, 103.
Lincoln, 56.
Lincolnshire heights, 32.
Lindsay, mt., 413.
Linlithgow, 85.
Linnhe, loch, 65.
Linz, 197.
Lipari isles, 156.
Lisbon, 154.
Lismore, 103.
Little Belt, 16.
Livadia, 210.
Liverpool, 52.
Lizard point, 29.
Llandaff, 63.
Lochnagar, mt., 69.
Lofoden isles, 107.
Loire, riv., 21, 130.
Lomond, loch, 75.
London, 52.
London (Canada), 351.
Londonderry, 100,101,102.
Londonderry, cape, 412.
Long's peak, 334, 355.
Longford, 102.
Loo-choo isles, 249.
Loop head, 90.
Lopatka, cape, 225.
Lopez, cape, 296.
Loretto, 165.
L'Orient, 137.
Louisville, 363.
Louth, 102.
Louvain, 126.
Lowell, 362.
Lowestoft, 26, 57.
Lowestoft Ness, 26.
Lowther hills, 70.
Lualaba, riv., 299.
Lubec, 191.
Lucerne, city, 173.
Lucerne, lake, 169.
Luchon, Bagnères de, 140.
Lugano, city and lake, 173.
Lugnaquilla, 92.
Lukuga, riv., 299.
Lune, riv., 36.
Luton, 49, 60.
Lutterworth, 60.
Lydoch, loch, 69.
Lym fiord, 113.
Lynn Regis, 57.
Lyons, 139.
Lyons, gulf, 17.

M.

Macao, isl., 236.
Macgillicuddy's Reeks, 92.
Mackenzie, riv., 343.
Madagascar, isl., 331.
Madeira, isl., 155, 296.
Madras, 281.
Madrid, 149.
Magdala, 313.
Magdeburg, 183.
Magellan, straits of, 375.

Maggiore, lake, 159.
Mahabaleshwar, 271.
Mahanuddy, riv., 271.
Mahawelli Ganga,riv.,265.
Maidstone, 61.
Maimatchin, 244.
Mainland, 67.
Mainz, 191.
Makallah, 263.
Mala point, 379.
Malacca, 286.
Malacca, straits of, 293.
Maladetta, or Nethou, 19.
Malaga, 148.
Malay peninsula, 291.
Maldive islands, 266.
Maldonado, 409.
Malin head, 87.
Malta, isl., 222.
Malvern hills, 33.
Man, isle of, 31.
Manaar, gulf of, 266.
Managua, 370.
Manawatu, riv., 427.
Manchester, 46.
Manchooria, 242.
Manilla, 293.
Manitoba, 351.
Mannheim, 189.
Mantua, 164.
Maracaybo, 388.
Maracaybo, lake, 387
Maranhao, 394.
Marathon, 210.
Maravaca, mt., 381.
Maree, loch, 76.
Maria Theresianopol, 199.
Mariato, cape, 332.
Mariato point, 379.
Maritza, river, 21, 202.
Marlborough, 429.
Marmora, sea of, 17, 201.
Marquesas islands, 436.
Marsala, 166.
Marseilles, 141.
Marshall group, 434.
Marston Moor, 56.
Martaban, gulf of, 267.
Martigny, 173.
Maryborough, 420.
Mask, lough, 95.
Massowah, 311.
Masulipatam, 282.
Matamoras, 367.
Matlock, 60.
Matsumai, 249.
Matterhorn, 159.
Mauritius, isl., 330.
May, isle of, 68.
Mayo, 104.
Meander, riv., 257.
Meath, 102.
Mecca, 263.
Mechlin, 126.
Medina, 263.
Mediterranean sea, 17.
Meinam, riv., 227.
Mekon, 288.
Mekon, riv., 227.
Melanesia, 431.
Melbourne, 422, 423.
Melrose, 86.
Melville isl., 333.
Memel, 182.
Menai straits, 30.
Mendip hills, 34.
Mendocino, cape, 354.
Mendoza, 407.
Merida, 148, 367, 388.
Merida, Nevada de, 387.
Merioneth, 63.
Mersey, river, 36.
Merthyr Tydvil, 45.
Meshed, 255.
Messina, 166.
Messina, straits of, 17.
Metz, 190.
Meuse, or Maas, riv., 21, [116, 123.
Mexico, 367.
Mexico, gulf of, 333.
Mezen, gulf, 211.
Mezen, riv., 21, 213.
Mfumbiro, mt., 297.
Miako, 248.
Michigan, lake, 344.
Mickle Fell, 31.
Middlesburgh, 45.
Middlesex, 58, 60.
Milan, 163.
Milford Haven, 30.
Millport, 85.
Miltsin mt., 297.
Minch, 67.
Minch, Little, 67.
Minden, 184.
Minho, riv., 144, 152.
Miösen, lake, 108.
Mississippi, riv., 356.
Missolonghi, 210.
Missouri, riv., 357.
Mitchell's peak, 355
Mizen head, 89.
Mocha, 263.
Moffat, 86.
Mohilev, 219.
Moldavia, 206.
Moluccas island, 294.
Mombasa, 319
Monaco, 141.
Monadh Liadh mts., 70.
Monaghan, 102.
Mondego, 152.
Mongolia, 243.
Monmouthshire, 57.
Monrovia, 316.
Mons, 126.
Mont Blanc, 18, 157.
Montenegro, 206, 207.
Monte Rosa, 157.
Monte Santo, gulf, 200.
Monte Video, 409.
Montgomery, 63.
Montpellier, 140.
Montreal, 349.
Montserrat island, 375.
Moon, mts. of, 297.
Moravian, mts., 193.
Moray or Elgin, 83.
Moray Firth, 67.
Morea, 210.
Morecambe bay, 30, 31.
Moreton, bay, 411.
Morocco, 304.
Moscow, 218.
Moselle, riv., 190.
Mosquitia, 370.
Mostar, 206.
Mosul, 260.
Moukden, 243.
Mount's bay, 29.
Mountmellick, 103.
Mourne mts., 91.
Mozambique, 319.
Muilrea, mt., 91.
Muirfoot hills, 70.
Mulhacen peak, 19.
Mulhausen, 190.
Mull, island, 65.
Mull, Sound, 65.
Mullet, The, 90.
Mullingar, 102.
Munich, 187.
Munster, 103.
Munster (Prussia), 184.
Murchison, prom., 332.
Murchison, mt., 334, 342.
Murcia, 149.
Murray, riv., 415.
Muscat, 263.
Mysore, 283.

N.

Naas, 102.
Nablous, 261.
Nairn, 83.
Nairn, riv., 71, 83.
Namur, 127.
Nancy, 138.
Nanga Parbet, mt., 268.
Nangasaki, 248.
Nankin, 241.
Nan-ling mts., 236.
Nantes, 137.
Naples, 165.
Narbonne, 140.
Narenta, riv., 202.
Naseby, 60.
Natal, 328.
Nauplia, 210.
Navarino, 210
Nazareth, 261.
Naze (Norway), 16.
Naze (England), 26.
Neagh, lough, 94.
Needles, The, 28.
Negrais, cape, 267.
Negro, cape, 236.

Neilgherry hills, 267.
Nephin Beg, mts., 91.
Nelson, 429.
Nelson, riv., 336.
Nene, riv., 37.
Nepaul, 285.
Nerbudda, riv., 271.
Nertchinsk, 235.
Ness, loch, 75.
Nethou, *see* MALADETTA.
Neu-chang, 243.
Neufchatel, 172.
Neufchatel, lake, 169.
Neusiedler, lake, 22, 194.
Neva, riv., 21, 213.
Neville's Cross, 55.
Nevis, isl., 375.
New Amsterdam, 390.
New Archangel, 364.
New Brunswick, 349.
New Caledonia, 432.
New Forest, 41.
New Granada, *see* COLUMBIA.
New Guinea, or Papua, 431.
New Hebrides, 432.
New Orleans, 363.
New South Wales, 420.
New York, 362.
New Zealand, 427.
Newbury, 62.
Newcastle, 52.
Newcastle (Canada), 349.
Newcastle (Australia), 349.
Newfoundland, 383.
Newmarket, 56.
Ngami, lake, 319.
Niagara falls, 344.
Niagara, riv., 344.
Nicaragua, 369.
Nicaragua, lake, 369.
Nicobar islands, 267.
Nicopoli, 206.
Niemen, riv., 21, 213.
Nieuveldt, mt., 324.
Niger, riv., 299.
Nijni Novgorod, 218.
Nile, riv., 298, 306.
Nile, White, 298.
Nile, Blue, 299.
Ning-po, 241.
Niphon, isl., 246.
Nismes, 140.
Nith, riv., 74.
Nordkyn, 107.
Nore, riv., 94.
Norfolk, 56.
Norfolk island, 430.
Norkoping, 110, 112
North Downs, 35.
North Foreland, 27.
North-West Cape, 412.
North-West Territory, 351.
North York Moors, 32.
Northampton, 58, 59, 60.
Northumberland, 54.
Norway, 107.
Nottingham, 58.
Nova Scotia, 348.
Nu-Gariep, riv., 325.
Nubia, 310.
Nun cape, 296.
Nuremburg, 188.
Nyangwe, 317.
Nyanza, lake, 318.
Nyassa, lake, 318.

O.

Obi, riv., 227, 233.
Oceanica, 431.
Ochil hills, 70.
Ochrida, lake, 202.
Odensee, 114.
Oder, riv., 21, 176.
Odessa, 219.
Oesel, isl., 211.
Oeta, mt.,
Ogowai, riv., 316
Okhotsk, 235.
Oland, 107.
Oldham, 46.
Oliphant Berge, 323.
Oliphant, riv., 325.
Olives, mt, 261.
Olmutz, 199.
Olney, 60.
Olympus (*Lacha*) mt., 202.
Omsk, 235.
Onega, gulf, 211.
Onega, river, 21, 213.
Onega, lake, 213, 214.
Ontario, 350.
Ontario, 345.
Ootacamund, 272.
Oporto, 154.
Orange, 141.
Orange riv., 325.
Orange Free State, 329.
Orenburg, 219.
Orinoco, riv., 382.
Orizaba, mt., 335, 363.
Orkney, isl., 67, 82.
Orleans, 137.
Orontes, riv., 257.
Ortegal, cape, 17, 142.
Ortler Spitz, 193.
Orwell, riv., 37.
Osaka, 248.
Ossa, or Kissovo, mt., 202.
Ostend, 126.
Otago, 420.
Otranto, strait of, 17, 200.
Ottawa, 350.
Ottawa, riv., 345.
Otway, cape, 412.
Oude, 280.
Ourga, 244.
Ouse, riv., 36.
Ouse, Great, 37.
Outeniqua, mts., 323.
Oxford, 58, 59, 60.
Ozark, mts., 355.

P.

Padua, 164.
Paisley, 86.
Palermo, 165.
Palestine, 260.
Paliari, cape, 200.
Palk, strait, 266.
Palmas, cape, 296, 316.
Palos, 148.
Palos, cape, 142.
Paltee, lake, 245.
Pampeluna, 149.
Panama, 387.
Panama, gulf, 379.
Para, 394.
Paraguay, 408.
Paramatta, 421.
Parana, 407.
Parana, riv., 383.
Paria, gulf, 378.
Paris, 137.
Parma, 166.
Paropamisan, mts., 253.
Parret, riv., 38.
Pasco, 398.
Passau, 188.
Patagonia, 409.
Patkoi, or Naga, mts., 268.
Patna, 280.
Patras, 210.
Patras, gulf, 210.
Pau, 140.
Paumota, or Low Archipelago, 435.
Pavia, 163.
Peak, The, 31.
Peak mts., 342.
Pedrotallagalla, mt., 264.
Peebles, 85, 86.
Pegwell bay, 27.
Pei-ho, riv., 237.
Pekin, 241.
Peling, mt., 236.
Pelion or Zagora, mt., 202.
Pembroke, 63.
Penang, 286.
Pennine chain, 31.
Pennygent, 31.
Pentland firth, 67.
Pentland hills, 70.
Penzance, 62.
Perekop, isthmus, 18.
Perigueux, 140.
Perm, 219.
Pernambuco, 394.
Peron, peninsula, 412.
Perpignan, 140.
Persia, 253.
Persian gulf, 225.
Perth (Scotland), 84.
Perth (Australia), 425.
Peru, 395.
Petchora, riv., 21, 213.
Peterborough, 60.
Peterwardein, 199.

Petra, 263.
Philadelphia, 362.
Philippine isles, 225, 293.
Philippopoli, 206.
Piacenza, 164.
Piepus, lake, 213.
Pike's peak, 355.
Pinchinca, mt., 380.
Pindus range, 200.
Pisa, 162.
Plombierès, 138.
Plymouth, 53, 62.
Plymouth sound, 29.
Plynlimmon, mt., 32.
Po, riv., 21, 159.
Point du Raz, 17, 128.
Poitiers, 139.
Poland, 217.
Poltava, 218.
Polynesia, 433.
Pomona, 67.
Pompeii, 165.
Poole harbour, 29.
Poonah, 281.
Popayan, 387.
Popocatepetl, mt., 335,365.
Port Arlington, 103.
Port Darwin, 413.
Port Elliot, 424.
Port Jackson, 411.
Port Lincoln, 424.
Port Natal. 323.
Port Patrick, 86.
Port Philip, 412.
Port Said, 310.
Port of Spain, 374.
Port William, 410.
Portland, 423.
Portland Bill, 29.
Portland, cape, 425.
Portland, isl., 29.
Porto-Rico, 371.
Portobello, 85.
Portree, 66.
Portsea island, 28
Portsmouth, 62.
Portugal, 151.
Poti, 231.
Potosi, 401.
Potsdam, 183.
Prague, 198.
Presburg, 199.
Preston, 47.
Prince Edward isl., 349.
Prince of Wales cape, 332.
Prussia, 188.
Pskov, lake, 213.
Puebla, 367.
Pulicat lagoon, 266.
Punjaub, 280.
Puno, 398.
Punta Arenas, 403.
Purbeck isle, 29.
Puy de Sancy, 19, 129.
Pyrenees, 19, 129, 143.
Pyrenees (Australia), 414.

Q.

Quantock hills, 34.
Quathlamba, mt., 324.
Quebec, 349.
Queen Charlotte isls., 341.
Queen's county, 102.
Queensberry hill, 70.
Queensland, 419.
Quetta, 252.
Quillimane, 319.
Quito, 385.

R.

Radnor, 63.
Radnor mts., 33.
Rajmahal hill, 268.
Rajpootana, 284.
Rannoch moor, 69.
Rastadt, 189.
Rathlin, isle, 88.
Ratisbon, 188.
Ravenna, 164.
Red Sea, 225.
Reggio, 165.
Reikiavik, 115.
Renfrew, 85.
Rennes, 137.
Rheims, 138.
Rhine, river, 21, 116, 168, 175.
Rhodes, isl., 256.
Rhone, riv., 21, 131, 168.
Riadh, 263.
Ribble, riv., 36.
Richmond (Surrey), 62.
Richmond (U.S.), 363.
Riesen Gebirge, 19, 180.
Riga, 218.
Riga, gulf, 211.
Rio Grande del Norte, 357.
Rio de Janeiro, 394.
Rio de la Plata, 383.
Rio Santiago, river, 365.
Roca, cape, 17, 151.
Rochdale, 47.
Rochefort, 139.
Rochester, 61.
Rockhampton, 420.
Rocky mts., 341, 354.
Rodrigues isles, 230.
Roggeveldt mts., 324.
Romania, cape, 224.
Rome, 165.
Roraima, mt., 381.
Rosario, 407.
Roscommon, 104.
Ross, 83.
Rossal point, 81.
Rossan point, 90.
Rother, riv., 38.
Rothesay, 85.
Rotterdam, 120.
Rouen, 137.
Roumania, 206.
Roxborough, 85.
Ruapehu, mt., 427.
Rugby, 60.
Ruska Poyano, 193.
Rutland, 58, 59.
Ryan, loch, 64.

S.

Saardem, 120.
Sable, cape, 340.
Sacramento, riv., 358.
Saghalien, 225.
Saguenay, riv., 345.
Sahara, The, 297, 313.
Saima, lake, 213.
Saint Abb's head, 68.
Saint Albans, 60.
Saint Albans head, 29, 35.
Saint Andrews, 84.
Saint Asaph, 63.
Saint Augustine, 363.
Saint Bees head, 30, 31.
Saint Bernard, Great, 157.
Saint Bride's bay, 30.
Saint Christopher, or Kitts, 356.
Saint Clair, lake, 344.
Saint Cloud, 138.
Saint Davids, 63.
Saint David's head, 30.
Saint Denis, 138.
Saint Elias, mt., 208, 364.
Saint Etienne, 139.
Saint Fernando, 374.
Saint Gall, 173.
Saint George, cape, 200.
Saint Germains, 138.
Saint Gothard, mt., 18, 167.
Saint Gothard pass, 169.
Saint Helena bay, 323.
Saint Helena, isl., 329.
Saint John, 349, 352.
Saint John's, riv., 325.
Saint Lawrence, riv., 343.
Saint Lawrence, gulf of, 345.
Saint Louis, 364.
Saint Louis, riv., 344.
Saint Lucia, 375.
Saint Martin, cape, 142.
Saint Michael's mt., 29.
Saint Paul de Loando, 317.
Saint Petersburg, 217.
Saint Sebastian, 148.
Saint Valery, 137.
Saint Vincent, cape, 17, 151.
Saint Vincent, gulf, 412.
Saint Vincent, isl., 375.
Sakaria, riv., 257.
Salamanca, 148.
Salamis, isl., 210.
Saldanha bay, 323.
Salerno, 165.
Salisbury, 62.
Salisbury plain, 35.
Salonica, 205.
Salonica gulf, 200.

Saluen, 227.
Salzburg, 197.
Samarcand, 232.
Samoa (*Navigator's Isl.*), [435.
San Francisco, 364.
San Juan, riv., 368.
San Marino, 165.
San Paulo, 394.
San Salvador, 369.
Sandhurst, 423.
Sandwich isles, 434.
Sanpoo, *see* BRAHMAPOOTRA
Santa Cruz isls., 432.
Santa Fe, Pass of, 355.
Santa Fé de Bogota, 387.
Santa Marta, 380.
Santa Maura, isl., 210.
Santarem, 154.
Santiago, 403.
Santiago de Compostella, [148.
Saporo, 248.
Saragossa, 149.
Saratov, 219.
Sardinia, 17, 166.
Sark, isl., 220.
Saskatchewan, riv., 343.
Sautpoora mts., 268.
Save, riv., 202.
Saxony, 185.
Sca-Fell, 32.
Scandinavia, 16, 107.
Scandinavian mts., 19, 20, [107.
Scarborough, 56.
Schaffhausen, 172.
Scheldt, riv., 21, 116, 123.
Schemnitz, 199.
Schiedam, 121.
Schiehallion, 69.
Schleswig, 185.
Schnee Koppe, 180.
Schwarz Wald, 19, 175.
Scilly Islands, 30.
Scotland, 64.
Scutari, 206.
Scutari, lake, 202.
Seal islands, 354.
Sedan, 138.
Sefid-rood, riv., 253.
Sego, 314.
Segura, riv., 134.
Seine, riv., 21, 130.
Selembria, riv., 202.
Selkirk, 85, 86.
Selsey Bill, 27.
Senaar, 311.
Senegambia, 316.
Seringapatam, 283.
Servia, 206.
Setubal, 155.
Severn, riv., 38, 39.
Severo, cape, 224.
Seville, 148.
Sevres, 138.
Seychelles isles, 330.
Shanghai, 241.
Shannon, riv., 93.
Shar Dagh, 18.
Shark bay, 412.
Shat-el-Arab, riv., 257.
Shediac, 349.
Sheffield, 48.
Sheppey isl., 27.
Sherman's pass, 355.
Sherwood forest, 41.
Shetland islands, 67, 82.
Shigatze, 245.
Shin, loch, 76.
Shin, riv., 71.
Shiraz, 255.
Shoumla, 206.
Shrewsbury, 58.
Shropshire, 57.
Siam, 290.
Siberia, 232.
Sicily, 17, 166.
Sidlaw hills, 70.
Sidra gulf, 296.
Sierra Acarai, 389.
Sierra Espinhaco, 381, 390.
Sierra d'Estrella, 151.
Sierra de Guadaloupe, 143.
Sierra de Guadarama, 143.
Sierra de Gredos, 143.
Sierra Leone, 320.
Sierra Madre, 365.
Sierra de Manchique, 152.
Sierra do Mar, 381, 390.
Sierra Morena, 19, 143.
Sierra Nevada, 19, 143.
Sierra Pacaraima, 389.
Sierra Parima, 380.
Sierra Tabatinga, 381.
Sierra de Vertentes, 390.
Sikok, 246.
Silistria, 206.
Silver Mine mts., 91.
Simla, 271.
Simon's bay, 323.
Simplon pass, 157.
Singapore, 286.
Sinope, 259.
Siout, 310.
Siragusa, 166.
Sivalik hills, 268.
Skager-Rack, 16.
Skagstoltind, 19, 107.
Skaw, 16, 113.
Skiddaw, mt., 32.
Skye, isl., 65.
Slaney, riv., 96.
Slave lake, 343.
Sleat Sound, 66.
Slieve Bloom mts., 91, 92.
Slieve Donard, 91.
Sligo, 104.
Sligo bay, 90.
Slyne head, 90.
Smyrna, 259.
Sneehatten, 107.
Sneeuw Bergen, 324.
Snowdon, 32.
Society isles, 435.
Sockatoo, 315.
Socotra, isle, 296.
Sotala, 319.
Soissons, 138.
Solent, 28.
Solway firth, 31, 64.
Somerset, 61.
Sophia, 206.
Sorata, mt., 380.
Soudan, or Negroland, 314.
Sound, The, 16.
South Downs, 35.
South Foreland, 27.
Southampton, 53.
Southampton water, 29.
Spa, 127.
Spain, 142.
Spalatro, 199.
Spartel, cape.
Spartivento, cape, 17, 156.
Spencer gulf, 412.
Sperrin, mts., 91.
Spey, riv., 71.
Spires, 188.
Spithead, 28.
Spurn point, 26.
Stadtland, 107.
Staffa, isl., 66.
Stafford, 58, 59.
Stamford Bride, 55.
Stannovoi, 227.
Start point, 29.
Staubbach falls, 169.
Stettin, 182.
Stettiner Haff, 174.
Stilton, 60.
Stirling, 80, 84, 85.
Stockholm, 110, 111.
Stockton, 54.
Stoke, 60.
Stonhenge, 62.
Storm mts., 324.
Stornoway, 67.
Stour, riv., 37, 38.
Straits Settlements, 286.
Stralsund, 182.
Strangford lough, 88.
Strasburg, 190.
Stratford-on-Avon, 60.
Stroud, 47.
Strumar, riv., 202.
Stuart range, 414.
Stuttgart, 188.
Suakin, 311.
Suez, 310.
Suez canal, 309.
Suez, gulf of, 226.
Suffolk, 56.
Suir, riv., 93, 94.
Suleiman mts., 251, 268.
Sumatra, isl., 293.
Sunday, riv., 325.
Sunderland, 53.
Superior, lake, 343.
Surat, 281.
Surinam, 390.

Surrey, 61.
Sussex, 60, 61.
Sutherland, 83.
Sutlej, riv., 271.
Sveaborg, 211.
Swabian Alps, 175.
Swansea, 54.
Sweden, 107.
Swilly, lough, 90, 98.
Swindon, 62.
Switzerland, 167.
Sydney (Australia), 421.
Sydney (Nova Scotia), 348.
Syr Daria, riv., 227.
Szegedin, 199.

T.

Table bay, 323.
Tabor, mt., 261.
Tabreez, 255
Tacna, 398.
Taff, riv., 39.
Taganrog, 219.
Tagus, riv., 21, 144, 152.
Tahiti, isl., 435.
Tajurra, 311.
Takht-i-Suleiman, 268.
Talavera de la Reina, 150.
Tamar, riv. (England), 38.
Tamar, riv. (Tasmania), 425.
Tamatave, 331.
Tampico, 367.
Tananarivo, 331.
Tanganyika, lake, 318.
Tanjore, 282.
Tanta, 309.
Taptee, riv., 271.
Taranaki, or New Plymouth, 429.
Tarbet Ness, 67.
Tarifa cape, 17.
Tarifa point, 142,
Tarim, river, 227.
Tashkend, 232.
Tasmania, 425.
Tatra, mt., 19.
Taunton, 62.
Taurus, mt., 256.
Tawe, riv., 38.
Tay, frith of, 63.
Tay, river, 72.
Tchar Dagh, mts., 207.
Tees, riv., 36.
Teheran, 255.
Tehuantepec, 367.
Teify, riv., 39.
Tejuco, 394.
Terek, riv., 213.
Test, riv., 38.
Teutoburger Wald, 175.
Tewkesbury, 60.
Thames, riv., 38.
Thanet, 27.
Thermopylæ, 210.
Thian Shan, 227.
Thirlmere, 39.
Thiva, 210.
Three Points cape, 296.
Thun, lake, 169.
Thuringian Wald, 175.
Thurso water, 71.
Tiber, riv., 21, 160.
Tiflis, 231.
Tigris, riv., 227, 257.
Tilsit, 182.
Timbuctoo, 314.
Tipperary, 103.
Titicaca, lake, 399.
Tiverton, 62.
Tobago, isl., 375.
Tobolsk, 235.
Tokay, 199.
Toledo, 150.
Tolima, Mt., 386.
Tomsk, 235.
Tongariro, mt., 427.
Toplitz, 198,
Topolias, lake, 210.
Tor bay, 29.
Torgau, 184.
Tornea, 108.
Tornea, river, 21.
Toronto, 350.
Torquay, 29, 62.
Torres strait, 413.
Torridge, riv., 38.
Tory isle, 90.
Toula, 218.
Toulon, 141.
Toulouse, 140.
Tournay, 126.
Tours, 137.
Towton, 56.
Towy, riv., 39.
Trafalgar, cape, 142.
Tramore bay, 89.
Transvaal state, 329.
Trapani, 166.
Trasimeno, lake, 160.
Trebizond, 260.
Trent, 198.
Trent, riv., 36.
Trèves, 185.
Trichinopoly, 282.
Trieste, 198.
Trinidad isle, 374.
Tripoli, 305.
Tripolitza, 210.
Trolhatta falls, 108.
Trondheim, 110, 111.
Troppau, 199.
Troyes, 138.
Truro, 62.
Truxillo, 398.
Tsi-tsi-har, 243.
Tucuman, 407.
Tugela, riv., 325.
Tullamore, 103.
Tulle, 139.
Tunbridge Wells 62.
Tunis, 305.
Tunja, 387.
Turin, 163.
Turkestan, Russian, 232.
Turkestan, Eastern, 249.
Turkestan, Western, 250.
Turkey, 200.
Turkey, Asiatic, 256.
Turks islands, 373.
Tuscar rock, 89.
Tuz-Gol, lake, 257.
Tweed, riv., 74.
Tyne, riv., 36.
Tyrone, 102.

U.

Uist, North Island, 67.
Uist, South Island, 67.
Ujiji, 318,
Ulia-sutai, 244.
Ullapool, 83.
Ulleswater, lake, 39.
Ulm, 188.
Ulster, 102.
Ungava bay, 340.
United States of America, 353.
Upper Nile, region of, 312.
Uppernavik, 339.
Upsala, 110, 112.
Ural mts., 18, 19, 20, 213.
Ural, riv., 21, 213.
Urbino, 165.
Uruguay, riv., 383, 408.
Urumiyah, lake, 228, 254.
Usk, riv., 39.
Utah, lake, 336.
Utrecht, 121.

V.

Vaal, riv., 325.
Vaduz, 191.
Valencia, 149, 388.
Valentia, isl., 90.
Valetta, 222.
Valladolid, 149.
Valona, 206.
Valparaiso, 403.
Van, 260.
Van Diemen, gulf, 413.
Varanger fiord, 211.
Vardar, riv., 202
Varna, 206.
Venezuela, 387.
Venice, 164.
Vera Cruz, 367.
Verona, 164.
Versailles, 138.
Verviers, 126.
Vesuvius, mt., 157.
Vicenza, 164.
Victoria, 421.

Victoria, lake, 228.
Victoria range, 414.
Vienna, 197.
Vienne, 141.
Vigo, 148.
Villa Rica, 394, 403.
Vilna, 219.
Vindhya range, 267.
Virgin isles, 375.
Vistula, riv., 21, 176, 213.
Vittoria, 148.
Vladiovostock, 235.
Volga, riv., 21, 213.
Vosges mts., 19, 129, 175.
Voyussa, riv., 202.

W.

Wahsatch mts., 355.
Waikato, 427.
Wakefield, 56.
Wallachia, 206.
Wallenstadt, 169.
Walney isle, 31.
Walsall, 48.
Wanganui, riv., 427.
Wantage, 62.
Warnamboul, 423.
Warsaw, 218.
Warwick, 58, 59.
Wash, 26, 37.
Washington, 363.
Wastwater, 39, 40.
Waterford, 100, 101, 103.
Waterford harbour, 89.
Waterloo, 126.
Waveney, riv., 37.
Wealden heights, 35.
Wear, riv., 36.
Wednesbury, 48.
Weimar, 191.
Welland, riv., 37.
Welle, riv., 315.
Wellesley, province, 286.
Wellington, 429.
Wells, 62.
Wenner, lake, 108.
Weser, riv., 21, 177.
West Indies, British, 352.
Wester Wald, 180.
Western peak, 373.
Westland, 429.
Westmeath, 102.
Westmoreland, 54, 55.
Wetter, lake, 108.
Wexford, 100, 101, 102.
Wexford harbour, 88.
Whernside, 31.
Whitby, 56.
White mts., 342, 355.
White sea, 211.
Whitehaven, 53.
Whitney mt., 335.
Wick, 83.
Wicklow, 102.
Wicklow head, 88.
Wicklow mts., 91.
Wiesbaden, 185.
Wight, isle of, 28.
Wigton, 85.
Wilhelmshafen, 185.
Wilson. cape, 412.
Wiltshire, 61.
Winchester, 62.
Windermere, 39.
Windsor, 62.
Windsor forest, 41.
Windward isles, 374.
Winnipeg, lake, 343.
Winterberge, mt., 324.
Witham, riv., 37.
Wittenberg, 183.
Wolds (Yorkshire), 32.
Wolds (Lincolnshire), 32.
Wolverhampton, 48.
Woodstock, 60.
Woolwich, 61.
Worcester, 58, 59, 60.
Worms, 191.
Worms head, 30.
Wotchish, mts., 342.
Wrath, cape, 67.
Wrekin, The, 33
Wurtemberg, 188.
Wurzburg, 188.
Wye, riv., 39.

X.

Xalapa or Jalapa, 367.
Xeres de la Frontera, 148.
Xucar or Jucar, riv., 144.

Y.

Yablonnoi, mts., 227.
Yakutsk, 235.
Yang-tse-kiang, 227, 237, 245
Yare, riv., 37.
Yarkand, 249.
Yarmouth, 54, 57.
Yeddo, 248.
Yellow Head pass, 342.
Yellow sea, 225.
Yenesei, riv., 227, 233.
Yeni-shehr, 206.
Yenikale, strait, 18, 212.
Yesso, isle, 246.
Yokohama, 248.
Yomadung, mts., 268.
York, cape, 411.
Yorkshire, 54, 55.
Youghal, 104.
Youghal harbour, 89.
Ypres, 126.
Ystwith, riv., 39.
Ythan, riv., 71.
Yukon (*Kwichpak*), riv. 364
Yung-ling, mts., 236.

Z.

Zagros, mts., 253.
Zambesi, riv., 300, 318.
Zante, isle, 210.
Zanzibar, 319.
Zara, 199.
Zealand, isl., 118.
Zug, lake, 169.
Zurich, 169, 172.
Zurrah, lake, 251.
Zutphen, 121.
Zuyder Zee, 117.
Zwarte Bergen, 323.
Zwolle, 121.

WILLIAM COLLINS AND COMPANY, PRINTERS, GLASGOW.

William Collins, Sons, & Co.'s Educational Works.

COLLINS' SERIES OF FIRST-CLASS SCHOOL ATLASES,

Carefully Constructed and Engraved from the best and latest Authorities, and Beautifully Printed in Colours, on Superfine Cream Wove Paper.

MODERN GEOGRAPHY—Crown Series.

MY FIRST ATLAS, consisting of 12 Maps, 9 inches by 7½ inches, folded 8vo, in Neat Wrapper, ... *s.* 0 *d.* 6

1 The Hemispheres.
2 Europe.
3 Asia.
4 Africa.
5 North America.
6 South America.
7 England and Wales.
8 Scotland.
9 Ireland.
10 Central Europe.
11 Australia.
12 Palestine.

THE PRIMARY ATLAS, consisting of 16 Maps, 9 inches by 7½ inches, 4to, Stiff Wrapper, ... 0 6

1 The Hemispheres.
2 Europe.
3 Asia.
4 Africa.
5 North America.
6 South America.
7 England and Wales.
8 Scotland.
9 Ireland.
10 Central Europe.
11 India.
12 Canada.
13 United States.
14 Australia.
15 New Zealand.
16 Palestine.

THE POCKET ATLAS, consisting of 16 Maps, folded in 8vo, and mounted on Guards, cloth lettered, ... 1 0

THE JUNIOR, OR YOUNG CHILD'S ATLAS, consisting of 16 Maps, 4to, with 16 pp. of Questions on the Maps, in Neat Wrapper, 1 0

THE SCHOOL BOARD ATLAS, consisting of 24 Maps, Crown 4to, cloth limp, ... 1 0

THE PROGRESSIVE ATLAS, consisting of 32 Maps, 9 inches by 7½ inches, 4to, cloth lettered, ... 2 0

1 The Hemispheres.
2 The World, (Mercator's Projection.)
3 Europe.
4 Asia.
5 Africa.
6 North America.
7 South America.
8 England and Wales.
9 Scotland.
10 Ireland.
11 France.
12 Holland and Belgium.
13 Switzerland.
14 Spain and Portugal.
15 Italy.
16 Sweden, Norway, and Denmark.
17 German Empire.
18 Austria.
19 Russia in Europe.
20 Turkey in Europe, and Greece.
21 India.
22 Persia, Afghanistan, and Beloochistan.
23 Turkey in Asia.
24 Chinese Empire and Japan.
25 Arabia, Egypt, and Nubia.
26 Palestine.
27 Dominion of Canada.
28 United States.
29 West Indies.
30 Australia.
31 New South Wales, Victoria, and South Australia.
32 New Zealand.

THE CROWN ATLAS, consisting of 32 Maps, on Guards, with Index, 8vo, cloth lettered, ... 2 6

THE NATIONAL ATLAS, consisting of 32 Maps, 4to, with a Copious Index, cloth lettered, ... 2 6

London, Edinburgh, and Herriot Hill Works, Glasgow.

COLLINS' SERIES OF SCHOOL ATLASES—CONTINUED.

PHYSICAL GEOGRAPHY—Demy Series.

	s.	d.
THE PRIMARY ATLAS OF PHYSICAL GEOGRAPHY, 16 Maps, Demy 4to, 9 by 11 inches, Stiff Cover, ...	1	0
THE POCKET ATLAS OF PHYSICAL GEOGRAPHY, 16 Maps, on Guards, Demy 8vo, cloth, ...	2	0

1 Hemispheres.
2 Physical Map of Europe.
3 Physical Map of Asia.
4 Physical Map of Africa.
5 Physical Map of North America.
6 Physical Map of South America.
7 Physical Map of the British Isles.
8 Maps of the World—shewing Temperature in March, April, May, June, July, and August.
9 Maps of the World—shewing the Mean Temperature in September, October, November, December, January, and February.
10 Map of the World—shewing the Constant, Periodical, and Variable Winds, &c.
11 Map of the World—shewing the Distribution of *Rain*, &c.
12 Map of the World—illustrating Earthquakes, &c.
13 Map of the World—shewing the Ocean Currents, &c.
14 Map of the World—shewing the Distribution of Birds and Fishes.
15 Map of the World—shewing Distribution of Quadrupeds, &c.
16 Map of the World—shewing Distribution of Plants, &c.

PHYSICAL GEOGRAPHY—Imperial Series.

THE PORTABLE ATLAS OF PHYSICAL GEOGRAPHY, 20 Maps, 11 by 13 inches, mounted on Guards, Imp. 8vo, cloth, ...	3	6
THE STUDENT'S ATLAS OF PHYSICAL GEOGRAPHY, 20 Maps, mounted on Guards. With Letterpress Description and Wood Engravings. By James Bryce, LL.D., F.R.G.S. Imp. 8vo, cl.,	5	0

1 Hemispheres—shewing proportions of Land and Water, with Length of Rivers and Heights of Mountains, &c.
2 Physical Map of Europe—shewing Mountains and Rivers, High and Low Lands.
3 Physical Map of Asia—shewing as above.
4 Physical Map of Africa—shewing as above.
5 Physical Map of North America—shewing as above.
6 Physical Map of South America—shewing as above.
7 Physical Map of the British Isles—shewing as above.
8 Various Sections across the Continents.
9 Various Sections in the Oceans; Diagram of Suez Canal, &c.
10 Maps of the World—shewing the Mean Temperature of the Air—March to August.
11 Maps of the World—shewing the Mean Temperature of the Air—September to February.
12 Map of the World—shewing the Distribution of Constant, Periodical, and Variable Winds; Limits of Trade Winds, &c.
13 Map of the World—shewing the proportionate distribution of *Rain*, &c.
14 Map of the World—illustrating Earthquakes and the distribution of Volcanoes.
15 Map of the World—shewing the Ocean Currents and Basins, and principal River Systems.
16 Map of the World—shewing the Geographical Distribution of Birds and Fishes.
17 Map of the World—shewing Geographical Distribution of Quadrupeds and Reptiles.
18 Map of the World—shewing the Geographical Distribution of Plants.
19 Map of the World—shewing the Distribution of Mankind according to
2